



UNION OF SOUTH AFRICA

# ANNUAL REPORT

OF THE

## Department of Public Health

Year ended 30th June, 1943

PUBLISHED BY AUTHORITY



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# DEPARTMENT OF PUBLIC HEALTH.

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# DEPARTMENT OF PUBLIC HEALTH.

CIVIL VIPS

## Report for the Year ended 30th June, 1943.

THE HONOURABLE THE MINISTER OF WELFARE  
AND DEMOBILISATION.

Sir,  
I have the honour to submit for your information the following brief report of the work of the Department of Public Health for the year ended 30th June, 1943.

### I.—INTRODUCTORY.

In spite of considerable and increasing difficulties the work of the Department of Public Health is being carried on and expanded. Much time has been devoted to planning for the future and the Secretary for Public Health has been a member of various committees, all with the object of co-ordinating present and post-war activities. It is expected that the report of the National Health Services Commission will be available early in 1944, and the recommendations of that Commission may visualise far-reaching changes. Meantime every effort is being made to use the present powers in the Public Health Act to the best advantage. One post-war development which is urgently necessary is registration of births and deaths for all sections of the population. At present we have only such registration for Europeans. The birth-rate for 1942 was 25.2 per 1,000 of the population, and the death-rate 9.4 per 1,000. These rates have been fairly constant for the past 20 years. As has been pointed out in previous reports the causes of deaths are changing and deaths are occurring from causes which mainly affect the older sections of the population. Deaths from diseases of the heart and circulatory system are steadily rising, as are also deaths from cancer, while deaths from other causes are falling.

The death-rate from tuberculosis is the same as it was pre-war, namely 36.18 per 100,000 of the population. In countries overseas there has been a marked increase in the number of deaths from tuberculosis during the war period. It is difficult to give a true picture of the position among the non-Europeans. Much more attention is being paid to the health of the non-European and so many more cases of tuberculosis are being discovered. Whether there is an actual increase I am not prepared to say, but, this I can say, that in the Native areas tuberculosis is endemic and often runs a chronic course. With increased industrial development, where the Native comes into contact with new surroundings and mode of life, it is inevitable that many will develop tuberculosis in an active form. There are two diseases which have given rise to anxiety, viz. typhus and plague. The incidence of typhus has increased and further cases are occurring in districts previously clear. Every effort is being made to deal with the delousing of Natives. A vaccine is being used in selected areas but, so far, it is not possible to report on the efficacy of this vaccine.

As regards plague, the routine examination of rats includes an examination of the bone marrow. It seems highly probable that the plague bacillus may be harboured in the bone marrow and yet no actual disease be present. This was found to be the case in Johannesburg. Further reference is made to the position later on in the report.

At the meeting of the Council of Public Health in 1942, there was a discussion on whether protective inoculation against diphtheria should be made compulsory. It was decided to carry out propaganda first, and it is possible to report that considerably more interest has been aroused and that parents are coming forward asking for this protection.

Statistics show that the incidence of diphtheria is rising and that the majority of cases occur in the first three years of life. Thus immunization should be carried out preferably in the sixth or seventh month of life.

### STAFF.

The staff position is even more serious than last year and the work is only being carried on because of the devotion to duty of the members of the staff.

Special reference must be made to the nurses employed by the Department. Owing to serious shortage of younger nurses, many of the sisters who are past the age of retirement have carried on and made it possible to keep our institutions going. They deserve the grateful thanks of the country.

### II.—VITAL STATISTICS.

At the 31st December, 1942, that is, the middle of the report year, the Census Department estimated the total population of the Union to be 10,708,500 of which 2,230,000 were Europeans. The non-European population was made up of 7,377,300 Bantu, 242,000 Asiatics and 859,200 Coloureds.

Tables 1 and 2 summarize the principal vital statistics for Europeans for the calendar year 1942. Tables 3 and 4 are interesting from the point of view of international comparisons.

The most significant feature is the fall in the European infantile mortality rate which is the lowest ever recorded for the Union. This is dealt with in more detail in the appropriate section of the report. The maternal mortality rate is also considerably lower than usual although it is a little higher than last year. In previous annual reports it has been noted that there is a tendency for the death-rates from the diseases of late and middle life, cancer and diseases of the heart and circulatory system, to rise while the mortality from pneumonia and bronchitis, which is in some measure preventable, tends to fall. These trends have been maintained and the death-rate from pneumonia and bronchitis is the lowest recorded. The lower death-rate from these diseases during the last few years is probably to some extent associated with recent advances in chemotherapy.

TABLE 1.—UNION OF SOUTH AFRICA: SUMMARY OF VITAL STATISTICS OF EUROPEAN POPULATION, 1920-1942.

Calendar Year.	European Population (estimated).	Birth Rate per 1,000 of Population.	Death Rate per 1,000 of Population.		Death Rate per 100,000 of Population from				Percentage of Total Deaths, the Cause of which was Medically Certified.	Infantile Mortality Rate (Deaths of Infants under One Year per 1,000 Live Births Registered).	Maternal Mortality Rate (Deaths of Mothers in connection with Pregnancy or Childbirth per 1,000 Live Births Registered).	Survival Rate or Rate of Natural Increase (Excess of Births over Deaths per 1,000 of Population).
			Actual or Crude.	Standardized.*	Diseases of Heart and Circulatory System.	Pneumonia and Bronchitis.	Cancer.	Tuberculosis (all forms).§				
1920.....	1,499,911	28.97	11.09	12.15	95.67†	113.87†	58.94†	46.00†	79.78	90.07	4.10†	17.88
1921.....	1,519,488‡	28.44	10.41	11.43	102.91	136.15	69.09	58.26	80.76	77.09	4.94	18.03
1922.....	1,556,241	27.52	9.48	10.41	97.99	127.24	70.88	47.74	82.96	72.91	5.21	18.04
1923.....	1,579,733	26.70	9.77	10.65	108.50	120.72	78.94	46.46	82.77	74.42	5.22	16.93
1924.....	1,610,774	26.29	9.62	10.44	123.92	123.79	76.36	51.59	84.74	73.73	4.75	16.67
1925.....	1,637,472	26.51	9.39	10.15	128.86	97.04	72.86	52.70	86.45	68.39	5.62	17.12
1926.....	1,676,660‡	26.16	9.59	10.28	127.21	113.44	71.18	53.41	87.76	64.82	4.56	16.57
1927.....	1,708,955	25.95	9.73	10.34	122.76	110.42	73.20	50.50	89.93	70.62	4.80	16.22
1928.....	1,738,937	25.77	10.15	10.69	133.53	127.72	77.52	50.95	89.93	70.49	4.98	15.62
1929.....	1,767,719	26.15	9.51	9.98	127.11	104.04	77.44	45.37	90.19	64.22	5.26	16.64
1930.....	1,797,900	26.44	9.69	10.08	132.33	112.87	82.62	46.78	91.15	66.84	5.26	16.75
1931.....	1,829,300	25.38	9.37	9.56	131.53	103.75	85.55	44.22	90.46	63.07	4.70	16.01
1932.....	1,859,400	24.17	9.97	9.98	137.52	113.75	89.06	42.33	90.84	68.57	5.31	14.20
1933.....	1,890,300	23.55	9.35	9.27	142.52	100.30	95.33	40.68	91.45	61.01	4.81	14.20
1934.....	1,914,700	23.44	9.68	9.55	156.21	94.53	92.39	39.54	91.91	60.79	5.99	13.76
1935.....	1,973,700	24.18	10.45	10.28	169.58	131.98	95.76	40.44	92.55	62.81	4.73	13.72
1936.....	2,008,700	24.21	9.57	9.50	154.38	106.19	97.28	34.40	92.88	59.06	5.10	14.64
1937.....	2,043,700	24.90	10.08	9.66	172.97	113.62	106.57	36.40	93.17	56.57	4.38	14.81
1938.....	2,081,400	25.01	9.48	8.93	153.55	102.53	103.44	38.34	94.20	51.69	3.69	15.53
1939.....	2,116,500	25.29	9.40	8.75	170.42	90.05	104.75	36.19	94.32	49.48	3.61	15.88
1940.....	2,152,700	25.29	9.42	8.65	190.18	89.93	102.80	35.95	94.75	50.06	3.37	15.87
1941.....	2,188,200	24.94	9.47	**	197.61	86.14	109.40	34.35	94.95	50.93	2.49	15.47
1942.....	2,230,000	25.18	9.35	**	199.69	81.97	109.33	36.18	94.83	47.52	2.83	15.83

\* The rate which would have obtained had the age and sex distribution of the population been the same as that of England and Wales at the 1901 census, the standard usually taken for international comparisons.

† Medically certified deaths only. Rates for subsequent years calculated on total deaths registered.

‡ Actual (per census).

§ Includes Miners' Phthisis combined with Pulmonary Tuberculosis.

\*\* Not yet available.

CHART OF DEPARTMENT OF PUBLIC HEALTH, AS AT 30TH JUNE, 1943.

*Minister of Public Health (HON. H. G. LAWRENCE).*

Secretary and Chief Health Officer (Chairman)  
Minister (Deputy Chairman)  
Director of Veterinary Services  
Mrs. J. E. Conradi  
Senator W. J. O'Brien and Mr. L. C. Serrurier  
Drs. K. Bremer, M.P., A. J. Orenstein, C. P. Theron and E. H. Cluver

*Secretary and Chief Health Officer (Dr. Peter Allan),*  
Acting Under-Secretary (A. Stuart).

Departmental Chief Clerk (N. A. G. Reeler).  
1 Chief Clerk, Gr. II.  
(D. J. M. Marais).  
2 Principal Clerks—  
(P. J. Pretorius and H. G. Andrews).  
*Sections.*

*Council of Public Health.*

Detached Officers.		Child Welfare.		Maternity and Child Welfare.		District Surgeons.		Leprosy.		Venereal Diseases.		Tuberculosis.		Epidemic and Infectious Diseases.		Food and Drugs Administration; Habit-forming Drugs.		Local Authorities.		Other Bodies.	
Cape Town:	Assistant Health Officer (Dr. J.H. Loots).	Medical Inspector (Dr. K. D. Winterton).	Vaccine Institute, Cape Town, and Vaccine Institute, Rosebank (Drs. W. F. Rhodes, R. Turner, L. Gordon, and A. H. Shapiro).	29 Whole-time. 5 Whole-time. (jointly).	Leprosy Advisory Committee.	Institutions.	Transvaal : Senior Malaria Officer : (Dr. D. H. S. Annecke).	249 City and Town Councils.	Central Housing Board, Chairman, Sir E. N. Thornton, Members : Messrs. A. Stuart, F. W. Jameson, J. S. Cleland, G. R. Savage, T. J. Canty (Assessor Member).	7 Senior Clerks. (65 Clerks, Typists, etc.).	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.	7 Senior Clerks.		
Durban:	Chief Health Officer (Dr. H. S. Gear)	Assistant Health Officer (Dr. J. J. du Pré le Roux).	Medical Inspector (Dr. N. L. Murray).	347 Part-time. 381 Total.	Secretary and Chief Health Officer, Dr. P. Allan (Chairman) Professor W. H. Crab, Drs. A. A. Piper, A. J. Orenstein, W. F. Rhodes, E. H. Cluver and K. Bremer, M.P.	Institutions.	Nelspruit Sanatorium : (Drs. H. R. Ackermann, P. Scher and C. A. Steggs).	93 Village Management Boards.	J. Combrink. (Acting Secretary)	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.	249 City and Town Councils.		
Johannesburg:	Chief Health Officer (Dr. F. W. P. Cluver).	Dental Health Officer (Dr. T. Ockerse).	Dental Health Officer (Dr. J. M. Latsky).	29 Whole-time. 5 Whole-time. (jointly).	Medical Inspector, Cape Native Territories (Dr. R. J. Smit).	Institutions.	Senior Malaria Officer : (Dr. J. J. V. Reenen).	152 Magistrates.	South African Medical Council, Pharmacy Board.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	
Port Elizabeth:	Assistant Health Officer (Dr. A. I. Ferguson).	Nutrition Officer (Dr. J. M. Latsky).	Medical Inspector, Cape Native Territories (Dr. R. J. Smit).	347 Part-time. 381 Total.	Medical Officers Native Health Units (Drs. S. L. Kark and E.C.A. Fristedt).	Institutions.	Pretoria : (Drs. A. R. Davison, H. J. F. Wood, P. A. Thornton and H. Pillemer).	1 Health Councils.	South African Medical Council, Pharmacy Board.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	
Other Sections.	Medical Inspector (Dr. B. Sampson).	South African Institute for Medical Research, Johannesburg, Port Elizabeth and Bloemfontein, East London and Border Pathological Laboratory.	Medical Inspector, Cape Native Territories (Dr. R. J. Smit).	29 Whole-time. 5 Whole-time. (jointly).	Medical Officers Native Health Units (Drs. S. L. Kark and E.C.A. Fristedt).	Institutions.	King Williams town. (F. J. Roach and Dr. P. B. v. d. Lith).	1 Local Health Commission.	South African Medical Council, Pharmacy Board.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	737 TOTAL.	
					Senior Dietitian (Miss G. M. Sedgwick).		Em Jayana : (F. J. Roach and Dr. P. B. v. d. Lith).		South African Medical Council, Pharmacy Board.												
					Two Dietitians.		Mkambati : (J. P. J. Kolver and Dr. F. S. Drewie).		South African Medical Council, Pharmacy Board.												
					Ecologist and Chief Rodent Officer (Mr. D. H. S. Davis).		Amaekulu : (E. G. C. Scottney and Dr. E. L. Riener).		South African Medical Council, Pharmacy Board.												
					Five Inspectors (4 plague and 1 typhus).		Bochem : (G. H. Franz).		South African Medical Council, Pharmacy Board.												

(a) Receives grant-in-aid.

(b) Seconded to Department of Labour.

TABLE 2.—SURVIVAL RATE OR RATE OF NATURAL INCREASE AMONG EUROPEANS IN THE UNION PER 1,000 OF THE POPULATION.

Year.	Birth-rate.	Death-rate.	Natural Increase.
1911	32.2	10.4	21.8
1912	32.2	10.3	21.9
1913	31.7	10.3	21.4
1914	30.2	9.5	20.7
1915	29.3	10.3	19.0
1916	29.3	10.2	19.1
1917	29.0	10.3	18.7
1918	28.6	17.2	11.4
1919	26.9	11.9	15.0
1920	29.0	11.1	17.9
1921	28.4	10.4	18.0
1922	27.5	9.5	18.0
1923	26.7	9.8	16.9
1924	26.3	9.6	16.7
1925	26.5	9.4	17.1
1926	26.2	9.6	16.6
1927	25.9	9.7	16.2
1928	25.8	10.2	15.6
1929	26.1	9.5	16.6
1930	26.4	9.7	16.7
1931	25.4	9.4	16.0
1932	24.2	10.0	14.2
1933	23.5	9.3	14.2
1934	23.4	9.7	13.7
1935	24.2	10.5	13.7
1936	24.2	9.6	14.6
1937	24.9	10.1	14.8
1938	25.0	9.5	15.5
1939	25.3	9.4	15.9
1940	25.3	9.4	15.9
1941	24.9	9.5	15.4
1942	25.1	9.4	15.7

TABLE 3.—COMPARISON OF BIRTH, DEATH AND NATURAL INCREASE RATES AMONG EUROPEANS IN THE UNION WITH OTHER COUNTRIES. AVERAGE RATES FOR THREE-YEARLY PERIODS (BASED ON LATEST AVAILABLE INFORMATION).

Countries.	Birth-rate.	Death-rate.	Natural Increase.
Union of South Africa	25.1	9.4	15.7
Holland	20.7	9.0	11.7
Canada	21.4	9.8	11.6
Portugal	26.1	15.6	10.5
New Zealand	19.3	9.4	9.9
Italy	23.5	13.7	9.8
Australia	18.3	10.0	8.3
Germany	20.0	12.2	7.8
United States of America	16.9	10.4	6.5
England and Wales	14.9	12.7	2.2
France	14.7	15.7	*

\* Decrease of 1.0.

TABLE 4.—INFANTILE MORTALITY RATES: EUROPEANS IN THE UNION, COMPARED WITH OTHER COUNTRIES. AVERAGE RATES FOR THREE-YEARLY PERIODS (BASED ON LATEST AVAILABLE INFORMATION).

New Zealand	32
Holland	36
Australia	38
Union of South Africa	50
England and Wales	53
Canada	59
Germany	61
France	73
Belgium	78
Italy	102
Lithuania	118
Portugal	128

### III.—ADMINISTRATIVE.

#### STAFF.

The Staff Chart included in this section shows the Departmental organisation. An important addition to the professional staff was the appointment of Dr. J. M. Latsky as Nutrition Officer.

The greatest difficulty is still being experienced in obtaining suitable temporary substitutes for officials who have proceeded on active service.

#### DISTRICT SURGEONCY SYSTEM.

Owing to the fact that so many members of the profession have been on military service the district surgeons, in common with other medical practitioners, have been severely taxed. The shortage of doctors has often made it difficult and sometimes impossible to fill vacancies which occur in the district surgeon service. All appointments which are made to this service during the war are of a temporary nature so that medical officers at present on active service will not be rejudged on their return. In spite of the difficulties referred to the district surgeons have continued to render valuable service to the community. The position in regard to the personnel engaged is summarized in the following table:—

TABLE 5.—DISTRICT SURGEONIES AND ADDITIONAL DISTRICT SURGEONIES AS AT 30TH JUNE, 1943.

Province.	Whole-time.	Whole-time, but Jointly with Local Authority or Public Body.	Part-time.			Total.
			On Inclusive Annual Salary.	Additional District Surgeons.	On Annual Salary with certain Supplementary Fees and Allowances.	
Cape	6	5	31	135	177	
Natal	3	—	2	43	48	
Transvaal	18	—	1	21	53	93
Orange Free State	2	—	—	15	46	63
UNION	29	5	1	69	277	381

The twenty-nine whole-time posts are those at Cape Town (2); Durban (3); East London; Port Elizabeth; Pretoria (4) (one at Bronkhorstspruit); Johannesburg (4); Pietersburg (2); Bloemfontein (2); Wynberg; Knysna; Heidelberg (Tvl.); Nigel; Vereeniging; Nylstroom (2); Rustenburg (2); and De Lagersdrift (District Middelburg, Tvl.).

3. TABLE 6.—LOCAL AUTHORITIES UNDER THE PUBLIC HEALTH ACT (1919) AS AT 30TH JUNE, 1943.

Province.	City and Town Councils.	Village Management Boards.	Local Boards.	Village Councils.	Health Committees.	Town Boards.	Magistrates.	Divisional Councils.	Board of Health.	Mining Commissioners.	Rural Local Authority.	Local Health Commission.	Total.
Cape	138	89	22	—	—	29	95	1	1	1	1	1	376
Natal	11	—	—	30	23	44	—	—	—	—	1	1	109
Transvaal	36	—	—	29	36	43	—	—	—	3	—	—	147
Orange Free State	64	4	—	—	—	36	—	—	—	1	—	—	105
UNION	249	93	22	29	66	23	152	95	1	5	1	1	737

### IV.—WORK OF THE DEPARTMENT.

#### 1. INSPECTIONS, INVESTIGATIONS AND FIELD WORK.

As with all other Departmental activities the field work has been carried out under the difficult conditions resulting from the war. Officers of the Department are, however, always readily available to give assistance and advice to local authorities in connection with the important work of preventing or controlling infectious diseases. The Department has also continued to co-operate with other government departments and to give advice to local authorities in connection with many other aspects of public health work.

#### 2. PUBLICATIONS.

*Dr. F. W. P. Cluver*, Deputy Chief Health Officer, Durban.  
“Poverty and Public Health” Agenda Book Social Security Code of South Africa, September, 1942.

*Dr. B. M. Clark*, Senior Assistant Health Officer, Johannesburg.  
“Pneumonic Plague: Recovery in a Proved case” (with Dr. S. Goldberg). S.A. Med. Jnl., Vol. XVII, No. 4, 27th February, 1943.

*Dr. B. A. Dormer*, Medical Superintendent, King George V Hospital for Tuberculosis, Durban.

“A Preliminary Survey of Bilharzia in Native Schools in River Valleys on the Natal Coast”. S.A. Med. Jnl., Vol. XVI, No. 19, 10th October, 1942.

“Treatment of Pulmonary Tuberculosis by Cadmium Sulphide” (with Drs. Friedlander and Wiles). Amer. Rev. Tuberc., Vol. XLVI, No. 2, August, 1942.

“Bronchial Carcinoma with Infiltration of the Left Auricles of the Heart” (with Drs. Friedlander and Wiles). Brit. Jnl. Tuberc., Vol. XXXVI, No. 4, October, 1942.

“Bronchography—The Use of a Modified Intranasal Method and a Movable Table” (with Dr. Friedlander and Mr. Gibson). Jnl. Thorac. Surg. 12.1, October, 1942.

“The Early Diagnosis of Pulmonary Tuberculosis” (with Drs. Friedlander and Wiles). S.A. Med. Jnl., Vol. XVI, No. 21, 14th November, 1942.

“Vitamin A Deficiency in Tuberculosis and Diabetes, and the effect of various Therapeutic Preparations” (with Mr. Gibson). S.A. Jnl. of Med. Sciences, Vol. 7, Nos. 2 and 3, July, 1942.

*Dr. A. R. Davison*, Medical Superintendent, Pretoria Leper Institution.

“Antigenic Treatment of Leprosy by means of a Non-Acid-Fast variety of Tubercle Bacillus” (with Grasset). S.A. Jnl. of Med. Sciences, Vol. 7, No. 4, November, 1942.

### 3. HEALTH EDUCATION AND PROPAGANDA.

The arrangement by which this work is delegated by the Department to the South African Red Cross Society, to whom a subsidy of £5,000 a year is paid, has been referred to in successive annual reports. During the past year the production of health propaganda films has formed the main activity of the National Committee for Health Education, which is the committee of the Red Cross Society responsible for this work. A very telling film dealing with the growing of vegetables and with the use of milk, and designed to improve nutrition among rural Natives, has been well received and been widely shown. Several short films, or "filmlets", have also been produced. These deal with flies as carriers of diseases, water, sanitation, maternal and child welfare and a number of diseases including plague, diphtheria, malaria, tuberculosis and the common cold. These filmlets or "shorts", similar to those much used in commercial advertising, are shown at ordinary film entertainments and are designed to draw the attention of the theatre going public to the subjects depicted and thus arouse the interest of the man in the street who might not be attracted to a special health propaganda performance. It is hoped in this way to arouse wide public interest in health matters. The filmlets have been shown on very extensive circuits throughout the Union and the commentaries are spoken in either Afrikaans or English depending on the areas where they are being shown.

The venereal disease film for Natives, "Two Brothers" which was produced by the Society some three years ago has been greatly in demand and has been extensively shown to both military and civilian audiences not only in the Union but also "Up North". It is available in both official languages.

A considerable amount of health propaganda material of various sorts is available both from the Red Cross Society and the Department to local authorities and others interested in the matter. Space does not permit of lists being published in this report but full particulars may be obtained on application. The need for education of the public in health matters is very great and the Department is anxious to further this work in every possible way.

### 4. LABORATORIES.

The amount of work done at the Department's laboratories again shows a marked increase over the previous year. This is again largely accounted for by an increase in the work undertaken for the Department of Defence. The work done at the East London laboratory has also increased very considerably. The Bloemfontein Branch of the South African Institute for Medical Research came into operation during the year under review. The work done at the Government laboratories at Cape Town and Durban, at the South African Institute for Medical Research and its branches and at the East London laboratory is shown in Table 7.

TABLE 7.—PATHOLOGICAL LABORATORIES: ANALYSES AND EXAMINATIONS, YEAR ENDED 30TH JUNE, 1943.

Particulars.	Government Laboratories.		South African Institute for Medical Research.			East London Hospital Board
	Cape Town.	Durban.	Johannesburg.	Port Elizabeth Branch.	Bloemfontein Branch.	
Specimens examined for Government Departments—						
Agriculture.....	1	—	—	(a)	(a)	—
Customs and Excise.....	19,705	2,618	29,992	6,336	2,509	1,227
Defence.....	1,033	751	2,049	1,218	547	18
Interior (Mental Hospitals, etc.).....	1,554	417	3,384	333	171	5
Justice.....	—	—	17,951	—	—	—
Prisons.....	—	—	—	—	—	—
Mines (including Miners' Phthisis).....	—	—	—	—	—	—
Posts and Telegraphs.....	—	—	—	—	—	—
Public Health (including Leper Institutions).....	13,260	8,988	108,461	7,897	—	14,271
Public Works.....	6	2	—	—	—	—
South African Railways and Harbours.....	285	1,154	(a)	(a)	—	—
Other Government Work.....	3,326	33	267	110	3	17
General Hospitals (Provincial).....	7,167	27,433	63,361	13,381	2,282	1,827
Local Authorities.....	41,226	9,574	15,799	29,469	314	—
Medical Practitioners.....	12,396	21,187	17,601	2,058	3,462	467
Other Governments or Administrations.....	87	280	6,550	—	—	—
Others.....	—	646	25,074 (b)	8	—	—
<b>TOTAL.....</b>	<b>100,046</b>	<b>73,083</b>	<b>290,489</b>	<b>60,810</b>	<b>9,288</b>	<b>17,832</b>
Manufactures and Issues—						
Autogenous Vaccines.....	250 (g)	7	31,350 (g)	3,525 (g)	1,325 (g)	26
Bacterial Vaccines (Stock).....	c.c.	—	471,302	(e)	(e)	—
Tuberculin Dilutions.....	c.c.	—	—	39	—	—
Sera (various), Bacterial Filtrates.....	c.c.	—	4,297,440	(e)	(e)	—
Anti-rabic Vaccine.....	c.c.	18,000	—	—	—	—
Chaulmoogra Oil Preparations.....	c.c.	10,000	—	—	—	—
Smallpox Vaccine (prepared at Vaccine Institute, Rosebank)—	—	—	—	—	—	—
Calf Lymph.....	Tubes	3,483,943	—	1,050,859 (f)	450 (f)	320 (f)
Chick Membrane Lymph.....	Tubes	1,000,000 (h)	—	—	—	—
Others.....	Doses	278,400 (d)	4	49,473 (e)	—	—
Attendance at Courts of Law by Members of Staff.....	—	330	—	—	—	—
Total Days' absence entailed by such Attendances..	—	120	4	—	—	—

(a) Included in other Government work.

(b) Includes 23,941 examinations for the Mining Industry.

(c) Oral vaccines.

(d) Iodized ethyl esters.

(e) Included in Johannesburg figures.

(f) Issues only.

(g) c.c.

(h) Tubes on hand.

### 5. BIOLOGICAL CONTROL LABORATORY.

Owing to war conditions and the secondment of staff to other duties the routine work of this laboratory has been

much reduced and only a few urgent examinations were carried out.

TABLE 8.—LICENCES ISSUED UNDER THE THERAPEUTIC SUBSTANCES REGULATIONS (GOVERNMENT NOTICE NO. 1131 OF 1935).

Therapeutic Substances.	Manufacturing Licences.			Import Licences.			Research Licences.			Vitamin Permits.		
	Issued 1942-43.	Cancelled 1942-43.	In Force 30/6/43.	Issued 1942-43.	Cancelled 1942-43.	In Force 30/6/43.	Issued 1942-43.	Cancelled 1942-43.	In Force 30/6/43.	Issued 1942-43.	Cancelled 1942-43.	In Force 30/6/43.
Antitoxic and Bacterial Sera.....	—	—	2	1	1	12	—	—	11	—	—	—
Antigens and Bacterial Vaccines..	1	1	14	1	—	14	—	—	11	—	—	—
Arsphenamines and Arsphenamine Derivatives.....	—	—	—	—	—	9	—	—	11	—	—	—
Insulin.....	—	—	—	—	1	12	—	—	11	—	—	—
Pituitary (Post. Lobe) Extract...	—	—	1	1	—	14	—	—	11	—	—	—
Sterilised Surgical Ligatures and Sutures.....	—	—	—	—	—	9	—	—	11	—	—	—
Sex Hormones and Sex Hormone Preparations.....	—	—	—	1	1	23	—	—	—	—	—	—
Vitamins and Vitamin-containing Preparations.....	—	—	—	—	—	7	—	—	—	—	—	18
Antivenomous Sera.....	—	—	—	—	—	1	—	—	—	—	—	—

### 6. PORT HEALTH ADMINISTRATION.

The abnormal conditions resulting from the war have again thrown an increased burden on the health staffs at the various ports. In addition to the greatly increased amount of shipping it is necessary to take even stricter precautions

than usual against the introduction of plague because it is difficult to ascertain the exact movements of ships before they come to our ports. The only cases of formidable epidemic disease introduced into the country during the period under review were two cases of typhus on a troopship arriving at Durban and one case on another ship arriving at Port Eliza-

beth. At Durban the troopship was placed in quarantine and after consultation with the Department of Defence all on board were regarded as contacts. The patients were removed to the infectious diseases hospital and steps were taken to disinfect everyone on board, their belongings and the ship. At Port Elizabeth the patient had been transferred from another ship. He and the contacts from both ships were removed to the infectious diseases hospital and suitable steps were taken to de-venomize both the crews, their belongings and the two ships concerned. There was no spread of the disease.

The necessary measures, in terms of the Aviation Health Act and regulations framed thereunder, have been taken for the prevention of the introduction of infectious disease at the various airports. It has not been found necessary to quarantine any passengers during the year for any formidable epidemic disease.

TABLE 9.—NOTIFICATION OF DISEASES BY MEDICAL PRACTITIONERS DURING THE YEARS ENDED 30TH JUNE, 1942 AND 30TH JUNE, 1943.

Disease.	Year Ended 30th June, 1942.		Year Ended 30th June, 1943.											
	Union.		Cape Province, excluding Transkei.		Transkei.		Natal.		Orange Free State.		Transvaal.			
	Union.	Total.	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.
Anthrax.....	31	43	8	18	—	1	—	2	3	6	1	4		
Diphtheria.....	3,317	3,417	960	546	10	13	486	175	66	38	858	265		
Encephalitis, Infective.....	25	40	5	13	—	—	2	—	1	1	8	10		
Enteric or Typhoid Fever.....	3,850	3,917	367	939	9	290	128	737	77	246	320	804		
Erysipelas.....	431	382	62	61	5	6	28	18	5	3	114	80		
Lead Poisoning.....	1	2	1	—	—	—	—	—	—	—	1	—		
Leprosy.....	699	630	1	48	—	150	—	161	1	54	5	210		
Malta Fever.....	10	21	2	1	—	—	2	—	—	—	9	7		
Meningitis, Epidemic Cerebro-spinal	629	931	143	387	2	5	23	36	2	7	83	243		
Ophthalmia, Gonorrhoeal.....	100	65	3	25	—	1	4	22	—	—	—	10		
Ophthalmia Neonatorum.....	603	601	24	209	—	5	4	92	2	17	48	200		
Plague (for detailed list of cases and deaths, see Table 14).....	79	77	1	14	—	3	—	—	2	49	1	7		
Poliomyelitis, Acute.....	45	36	10	3	—	—	12	—	—	1	9	1		
Puerperal Fever, including Puerperal Sepsis.....	578	565	39	138	—	30	10	94	7	11	87	149		
Rabies.....	3	1	—	—	—	—	—	—	—	—	1	—		
Scarlatina or Scarlet Fever.....	7,949	2,779	577	42	12	6	247	9	88	10	1,734	54		
Smallpox (for detailed list of cases and deaths, see Table 15).....	1,781	1,469	1	120	—	—	5	573	3	96	—	671		
Trachoma.....	87	105	4	18	—	—	11	15	—	—	2	55		
Tuberculosis.....	14,580	17,136	619	5,961	16	3,625	362	3,005	21	216	322	2,989		
Typhus Fever (for detailed list of cases and deaths, see Table 22).....	1,546	2,879	15	543	3	2,126	7	19	—	21	1	144		
TOTALS.....	36,344	35,096	2,842	9,086	57	6,261	1,331	4,958	278	776	3,604	5,903		

## 2. BILHARZIASIS OR SCHISTOSOMIASIS.

It is most regrettable to record that the present abnormal conditions are having a serious effect on the control of bilharziasis in the Union, and much of the good work that has been accomplished in the years gone by is being slowly undone. The Transvaal Bilharzia Committee, which is responsible for carrying out the campaign against this disease in the Transvaal, is still seriously handicapped by its inability to engage a medical practitioner and a nurse to staff the mobile unit owing to a general shortage of doctors and nurses. The work is therefore being done spasmodically by the school medical inspectors during the long vacations. The schools in Rustenburg Town and a few of the district schools that were suspected of being heavily infected were examined during the year. Altogether 1,121 children were examined and 237 (approximately 20 per cent.) were found to be suffering from bilharziasis. Steps were taken to provide treatment for all these children and the question of providing swimming pools at these schools is under consideration.

The system of sustained propaganda and financial assistance in providing swimming baths as well as bilharziasis water at schools is being continued by the Committee. Certain heavily infected areas have also been found in Natal. In that Province no organised scheme for treatment of bilharziasis has as yet been established. Wherever practicable District Surgeons are authorised by the Department to undertake the treatment. This procedure is, however, uneconomical and less efficient than a scheme organised as in the Transvaal. Several foci of infection were also discovered in the Transkei and were dealt with departmentally.

## CANCER.

In previous annual reports attention has been drawn to the importance of cancer as a cause of death and to the work and objects of the National Cancer Association. Owing to war conditions no material progress has been made in connection with the establishment of a cancer institute. The death rate from cancer is shown in Table 1 which indicates the great importance of the disease.

## DIPHTHERIA.

The incidence of this disease is still unnecessarily high in the Union. The number of local authorities which are taking steps to encourage active immunization is gradually increas-

## V.—INFECTIOUS AND OTHER DISEASES.

### 1. NOTIFICATIONS.

The total number of notifications of infectious diseases was a little lower than last year but still considerably higher than usual. Last year the number of cases notified was particularly high because of the prevalence of scarlet fever. During the year under review the incidence of this disease has been somewhat higher than usual but the main reason for the high total number of cases of infectious disease notified was the increased number of notifications of tuberculosis. The notifications of cases of typhus were also considerably higher than usual. Table 9 shows the number of cases of infectious diseases reported during the year. The totals for the previous year are also given for comparison. It must be borne in mind, however, that many cases, particularly amongst the Natives, are never seen by a medical practitioner and are, consequently, not notified.

ing and more interest is being displayed in the matter but the efforts to combat the disease are still inadequate. A survey of cases reported to the Department during the past year shows that, unlike the position in England where the incidence is greatest over the age of 10 years, in South Africa at present the greatest incidence of diphtheria is in the 0-5 year group. It is extremely important that this fact should be realised because there is a tendency to concentrate on immunizing the school going child whereas the majority of infections and the deaths have already occurred before this age is reached. For example while 637 cases occurred amongst children 5 to 10 years of age nearly double that number (1,043) occurred in the 0 to 5 year group as there were almost as many cases in the 0-1 year group as there were in the 8th or 9th year groups. Also, the deaths in the 1-4 year group far exceed those in any other group, and actually are almost double the sum of all the following groups up to 75 years and over.

In order to prevent the ravages of this deadly disease it is therefore emphasised that children should be immunized during the second half of the first year of life. It is considered necessary to stress the importance of immunization at this early age because of the very considerable number of cases which occurs in infants under one year of age. Immunization can generally be effectively carried out from the age of six months but it is recommended that children done at six or seven months should be Schick tested a few months later to see that they have developed a satisfactory degree of immunity. Older children who have not had diphtheria, whatever their age, should be immunized as soon as possible. As, however, a fair proportion of children over the age of about eight are immune it is recommended that children over this age should first be Schick tested.

The immunization consists of a small injection of 0.2 cc. Alum Precipitated Toxoid given under the skin, followed not less than one month, and preferably about six weeks, later by a second injection of 0.5 cc. If given to young children the reaction is negligible. The three injection method using Ramon's Anatoxine is also popular in South Africa but it would appear from recent work especially in England and America that, although very good, it produces no better immunity than the best brands of Alum Precipitated Toxoid. The latter is apparently the material of choice at present for young children although in older children and adults the use of Anatoxine has the advantage that it seems to be less liable to produce reactions.

TABLE 10.—DIPHTHERIA: DISTRIBUTION OF CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1943.

Area.	European.		Non-European.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape Province (excluding Transkei)....	960	50	546	13	1,506	
Transkei.....	10				23	
Natal.....	486	13	175	44*	661	
Orange Free State.....	66	15	38		104	
Transvaal.....	858	83	265		1,123	
TOTAL.....	2,380	161	1,037	44	3,417	205

\* In respect of non-Europeans the deaths in the case of Asiatics and Coloureds only are shown.

In the above table no figures for Native deaths are shown as statistics are not available. The following list, however, indicates the deaths of Natives from diphtheria registered in the principal towns in the Union during 1942. These figures probably include some cases infected elsewhere and imported into these towns.

Cape Town	—	Pretoria	3	Johannesburg	10
Port Elizabeth	7	Bloemfontein	—	Krugersdorp	1
East London	1	Benoni	—	Nigel	—
Kimberley	—	Boksburg	—	Randfontein	—
Pietermaritzburg	1	Brakpan	—	Roodepoort	—
Durban	7	Germiston	3	Springs	1

##### 5. LEPROSY.

The following tables summarize the position regarding all known lepers both in and outside the various institutions.

TABLE 11.—LEPER INSTITUTIONS: PATIENTS THEREIN ON 30TH JUNE, 1943.

Institution.	Euro-peans.		Native.		Mixed Coloured.		Asiatic.		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Persons.
Pretoria....	52	22	534	284	61	26	7	5	654	337	991
Mkambati..	—	—	108	101	—	—	—	—	108	101	209
Emjanyana	—	—	282	246	—	—	—	—	282	246	528
Amatikulu.	—	—	256	173	—	—	—	—	256	173	429
Bochem... .	—	—	55	50	—	—	—	—	55	50	105
TOTAL.....	52	22	1,235	854	61	26	7	5	1,355	907	2,262

TABLE 12.—LEPROSY: FIRST ADMISSIONS, RECRUDEDSED CASES, DISCHARGES AND DEATHS, YEAR ENDED 30TH JUNE, 1943.

Institution.	Admissions for First Time.	Recrudedsed.	Discharged.	Died.
Pretoria.....	307	40	160	79
Mkambati.....	42	10	65	14
Emjanyana.....	131	33	181	61
Amatikulu.....	109	22	88	52
Bochem.....	15	1	9	6
TOTAL.....	604	106	503	212

TABLE 13.—LEPROSY CASES REMAINING IN THEIR OWN HOMES ON 30TH JUNE, 1943.

	Certified and Awaiting Removal to Leper Institution.	Home Segregated.	Discharged from Leper Institutions.		Total.
			Still under Surveillance.	Released from Surveillance.	
Cape Province (excluding Transkei).	3	2	213	594	812
Transkei.....	18	1	802	1,370	2,191
Transvaal.....	3	1	755	1,207	1,966
Natal.....	11	—	286	769	1,066
Orange Free State.....	1	1	155	240	397
UNION.....	36	5	2,211	4,180	6,432

##### 6. MALARIA.

###### (a) Natal and Zululand.

The incidence of malaria was considerably lower than in the previous year and was restricted to isolated cases in the Native reserves and costal areas of Northern Zululand. The number of cases infected within the province was, with one exception, the lowest recorded during the last twelve years.

In areas under the control of the statutory malaria committees the incidence of the disease was particularly low and was restricted to a few isolated cases north of the Umfolosi River. Climatic conditions were in general less favourable than during the previous year for the breeding of the main vector, *A. gambiae*. Although this militated against the prolific breeding of this vector, it had little effect on its distribution and breeding was located in 26 of the 45 districts in the province. There was an increase in the breeding of *A. funestus* due to the more constant flow in the smaller coastal streams which provided more favourable conditions for the breeding of this vector.

The proclamation of the Hluhluwe area in the Zululand lowveld as a statutory malaria committee area during the year is of unusual significance and serves to emphasise the important part played by locally organised control. The area embraced by this committee is almost entirely pastoral and was at one time considered to be so malarious that individual protection appeared to be the only practical method of combating the disease. In view of the widely scattered homesteads any success achieved by this committee will be of the greatest interest as the terrain and conditions generally are typical of large tracts of the Union now scheduled as malarial areas of high endemicity.

As an example of what can be achieved by efficient control the following is worthy of mention. In January 1943 a National Road construction gang had to be moved from the Natal midlands to the Zululand lowveld within a malaria committee area. This Department was approached for advice on the selection of a site and the measures which it deemed necessary to take. The camp was established and has remained there throughout the most dangerous malaria period without a single infection among an average staff of 55 Europeans and 105 Natives. The control measures employed consisted of larvicidal measures within a mile of the camp and insecticidal spraying of all huts every morning. The cost of control over six months, including Native labour but excluding European supervision which was undertaken by the labour overseer, was approximately £130, representing ten shillings for every hundred pounds paid in salaries.

Close co-operation is maintained between the Union Health, other Government Departments and all local organisations carrying out malaria control measures. The success achieved is largely due to the willingness of the numerous bodies to act on advice given and the Department has reason to be grateful for their unflagging assistance and support in the effective prosecution of malaria control in this province.

###### (b) Transvaal.

Climatic conditions in the year under review were unsuitable for the extensive and prolonged breeding of malaria carrying mosquitoes and the incidence of the disease was lower than that during any of the previous twelve years. There was, however, a sudden increase in new cases of malaria in certain parts with the onset of winter due to a premature relaxation of the necessary precautions by some individuals.

Certain local authorities situated in the malarious areas of the Transvaal have built up efficient anti-malaria organisations. The Department has given considerable assistance and advice in establishing this work and has trained the necessary personnel. The good results achieved by such local authorities as Pietersburg and Tzaneen at comparatively little expense have proved most gratifying.

As in previous years a member of the Department's staff co-operated with the management of the Letaba Estates. Among the European staff not a single case of malaria was contracted on the Estates. This is extremely satisfactory as they are surrounded by a location and situated in a hyperendemic area.

##### 7. PLAGUE.

The epidemiology of plague during the year closely paralleled that of the preceding year both in geographical distribution and in number of outbreaks. There were, in all, 28 outbreaks with 77 cases and 39 deaths (see Table 14). In the Cape Province there were sporadic outbreaks at widely separated points ranging from the Transkei to the borders of the Kalahari. In the main outbreaks were concentrated in the north-western Orange Free State, particularly in the Bothaville area. The majority of the cases were bubonic, but there were some septicaemic and a few pneumonic cases, most of the latter developing from an initial bubonic or septicaemic form and fortunately with little subsequent spread.

Field surveys showed that the wild rodent population in the central Free State, especially in the vicinity of Bloemfontein, was increasing. This area abuts onto the Bothaville-Hoopstad area where plague had reduced the rodents considerably and it is possible that it will spread to the healthy rodents further south.

In view of the constant danger of plague spreading from the Cape Midlands to the coastal belt to the north and east of Cape Town a beginning was made to get more detailed information on the differences in the rodent and flea fauna in plague and plague-free areas in the Cape Province, particularly in the vicinity of the protective rodent-free belt.

maintained by the Department between Elands Bay and Citrusdal and across the Wolseley valley. A series of observation points was established north of the belt between Het Kruis and Graaffwater where periodic observations were carried out to determine population changes, to obtain regular supplies of material for bacteriological examination and to make a representative collection of rodent fleas to discover the limits of distribution of known plague-carrying fleas in the plague-free areas. These investigations were supplemented by rodent and flea surveys in the karroo, on its boundary with the coastal belt and in the coastal belt itself as far as Port Elizabeth. The endemic plague area around Uitenhage was especially studied in an attempt to find an explanation for the absence of plague in similar areas supporting a similar rodent fauna.

Towards the end of 1942 a localised epizootic was discovered to the south-west of Johannesburg, south of Roodepoort. A gerbil (*Tatera*) carcase, on examination, showed plague-like organisms, but unfortunately the strain could not be isolated. A close watch on the area was maintained but the gerbil population increased steadily. In July, 1943, however, gerbils began to die out on the farm Zuurbekom, 17 miles from Johannesburg, and *Pasteurella pestis* was isolated both from gerbils found dead in the veld and from some that had been caught alive for observation and had died in captivity. At the same time an epizootic was discovered by the Johannesburg City Health Department's rodent staff on the Johannesburg-Alberton border, which was proved to have been caused by *P. pestis*. The development of the epizootics and the measures taken by the Reef municipalities will be described in the next annual report.

A noteworthy advance made during the year was the development of a trap for live gerbils made in response to the demand for gerbils for the manufacture of anti-typhus vaccine. The trap, now known as the Downpipe trap, was evolved jointly by members of the rodent staffs of the South African Railways and Harbours, the Johannesburg City Health Department and this Department. In its final form it consists of a galvanised iron tube, 12" x 4", fitted with a conical mesh-wire entrance with swinging gate modelled on that used in the Powell rat-trap, and closed at the other end by a removable lid. The traps are set in the mouths of burrows for catching gerbils and it has been found that they can also be set in runways to trap vlei-rats (*Otomys*), striped mice (*Rhabdomys*) and multimammate mice (*Mastomys*).

Apart from its use in obtaining a supply of live gerbils for typhus vaccine production the Downpipe trap immediately made available a means of carrying out much more detailed investigations of the population dynamics of gerbils. Monthly live-trapping was carried out in a selected colony near Johannesburg. Each gerbil caught was marked and released at the site of capture. It has been possible to determine certain facts about the rate of growth and movements of this population in the twelve months during which it has been studied. The breeding females remained close to the area of the warren in which they gave birth to their first litter the adult males tended to move from one warren to another fairly freely, while the young adults on reaching sexual maturity usually left the vicinity of the home warren to establish breeding units of their own at varying distances. The general population density level remaining fairly steady, but the "personnel" of the colony was constantly changing as members died from various causes and their places were taken by new generations. The facts obtained so far throw some light on the mechanism of plague-spread and support the view that small scale movement is the rule and long-distance movement the exception, and that if these long distances do come into the picture they will be covered by the adult males or maturing young, and not by the females.

Bacteriological and parasitological studies continued to be done in close collaboration with the South African Institute for Medical Research.

TABLE 14.—DISTRIBUTION OF HUMAN PLAGUE AMONG THE DISTRICTS OF THE THREE AFFECTED PROVINCES DURING THE YEAR ENDED 30TH JUNE, 1943.

	No. of Out- breaks.	European.		Non- European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
<b>Cape—</b>							
Albany.....	1	—	—	1	1	1	1
Calvinia.....	1	1	—	8	2	9	2
Glen Grey.....	1	—	—	1	1	1	1
Kuruman.....	1	—	—	4	4	4	4
St. Marks.....	1	—	—	2	2	2	2
Venterstad.....	1	—	—	1	1	1	1
Six Districts.....	6	1	—	17	11	18	11
Natal.....	—	—	—	—	—	—	—
<b>Transvaal—</b>							
Wolmaransstad.....	1	1	—	7	6	8	6
One District.....	1	1	—	7	6	8	6
<b>Orange Free State—</b>							
Bothaville.....	4	—	—	9	5	9	5
Heilbron.....	6	—	—	14	3	14	3
Hoopstad.....	1	—	—	3	2	3	2
Kroonstad.....	1	1	—	—	—	1	1
Lindley.....	1	—	—	2	1	2	1
Vrededorf.....	8	1	—	21	11	22	11
Six Districts.....	21	2	—	49	22	51	22
UNION.....	28	4	—	73	39	77	39

#### 8. SLEEPING SICKNESS.

In the two previous annual reports a warning note was sounded regarding the possibility of the introduction of sleeping sickness into the Union from either the Bechuanaland Protectorate or Portuguese East Africa. As indicated in last year's report it seems very unlikely that the spread of tsetse fly would take place from Bechuanaland into the Union and the danger from that source is the possible introduction of cases or carriers. Owing to war conditions it has not been possible to carry out any further investigations regarding the possibility of tsetse fly being introduced into the north-eastern Transvaal from Portuguese East Africa and this matter will receive further attention when conditions are more normal.

#### 9. SMALLPOX.

A larger number of outbreaks of smallpox occurred than during last year. All the four provinces were involved and outbreaks were dealt with at widely scattered points. This extension of the disease may be accounted for by the increased movement of Natives from one part of the country to another on work in connection with the war effort. The actual number of cases, however, though still high showed a marked decrease as compared with the year before. The case mortality rose from less than 1 per cent. to 3.2 per cent.

Table 15 summarises the distribution of cases and Table 16 shows the number of vaccinations of infants and children in the classes of the population which register births.

TABLE 15.—SMALLPOX: CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1943.

Province.	Number of Districts in which Outbreaks Occurred.	European.		Non-European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	8	1	—	120	—	121	—
Natal.....	19	5	—	573	10	578	10
Orange Free State	13	3	—	96	2	99	2
Transvaal.....	29	—	—	671	35	671	35
UNION.....	69	9	—	1,460	47	1,469	47

TABLE 16.—VACCINATION OF INFANTS AND CHILDREN IN THE CLASSES OF THE POPULATION WHICH REGISTER BIRTHS, YEAR ENDED 30TH JUNE, 1943.

Particulars.	Cape.		Transvaal.		Natal.			Orange Free State.	Union.
	Cape Peninsula.	Remainder of Province.	Rand Area.	Remainder of Province.	Durban.	Pietermaritzburg.	Remainder of Province.		
Births entered in Vaccination Register									
Successfully Vaccinated.....	*	*	16,895	13,314	2,810	715	1,275	5,018	40,027†
Insusceptible to Vaccination.....	2,324	1,987	2,578	3,365	1,298	396	445	2,404	14,797
Vaccination Postponed owing to Illness.....	15	44	42	30	30	9	9	27	206
Previously had Smallpox.....	16	63	271	203	59	18	18	737	1,385
Deaths of Infants under Two Years Registered.....	—	—	—	—	—	—	—	—	—
Exempted under Section 10, Act No. 15 of 1928.....	*	*	1,130	967	236	22	140	242	2,737†
	23	54	108	66	70	9	18	31	379

\* Not available.

† Excluding the Cape Province.

## 10. TUBERCULOSIS.

Steady progress is being made in providing accommodation for sufferers from tuberculosis. The section at Nelspoort which, unfortunately, was burned down has now been rebuilt.

The extra 102 beds at Rentzkies Farm, Cape Town, are in use. The staff difficulties were overcome by employing non-European nurses who ordinarily would have been in Cape Town studying for certificates as Health Visitors. It is proposed to add another 102 beds to this hospital. There is sufficient ground and the plans are ready. Plans are also ready and the ground donated by the Umtata Municipality for the first 100 beds of a tuberculosis hospital for Natives near Umtata. There is also a proposal to erect an institution to serve the South-western districts, and it is proposed to site this near Oudtshoorn. The hospital at Springbok for 18 beds is at least completed, and ready for use. The tuberculosis institution at Paarl consisting at present of 50 beds is serving a useful purpose and plans are on foot to increase to 125, 100 for non-Europeans and 25 for Europeans. Stellenbosch Municipality is also making certain alterations to its infectious diseases hospital whereby some 25 more beds will become available for European cases of tuberculosis. Plans for the tuberculosis hospital for 60 beds (30 European and 30 non-European) at Beaufort West are ready.

The final plans for the institution at Worcester are now being dealt with. At Rietfontein 100 more beds are ready. So far no building has been done at the site of the proposed 200 bedded hospital at Durbanville, but it is understood that the Cape Town Municipal authorities are getting out final plans.

The position with regard to bed accommodation for T.B. cases throughout the Union may be summed up as follows:—

	Number of Beds for—		
	Euro-peans.	Non-Euro-peans.	Total.
A.—Institutions Established and Maintained by the Department—			
King George V Tuberculosis Hospital.....	76	53	129
Nelspoort Sanatorium (Civilian portion)....	106	68	174
Nelspoort Sanatorium (Military section)....	100	—	100
Rietfontein T.B. Hospital.....	—	148	148
Rietfontein T.B. Hospital (temporary accom-modation).....	—	86	86
*Springbok T.B. Hospital.....	—	18	18
	282	373	655
B.—Institutions Established by Department but maintained by Local Authorities and other Public Bodies under Special Agreements—			
MacVicar T.B. Hospital.....	—	100	100
Rentzkies' Farm Quarantine Station and T.B. Hospital.....	—	174	174
C.—Local Authority Schemes (Seventeen).....	149	469	618
D.—Mission Hospitals (Thirty-nine).....	—	478	478
E.—Schemes maintained by other Organisations (ten).....	120	162	282
TOTALS.....	551	1,756	2,307

\* Not yet opened owing to the difficulty of securing staff.

The totals represent beds actually allotted for T.B. patients but it should be mentioned that in addition accommodation is usually made available in I.D. wards for such patients in cases of necessity.

With regard to the additional accommodation in respect of which proposals are at present under consideration by the Department and by local authorities the position is as follows:

	Number of Beds for—		
	Euro-peans.	Non-Euro-peans.	Total.
A.—Departmental Institutions—			
Oudtshoorn T.B. Hospital.....	10	90	100
Umtata T.B. Hospital.....	—	100	100
	10	190	200
B.—Institutions to be Established by Department but maintained by Local Authorities under Special Agreements—			
Rentzkies Farm T.B. Hospital.....	—	102	102
C.—Local Authority Schemes (eight).....	144	562	706
TOTAL.....	154	854	1,008

The completion of these schemes will thus bring the total of the bed accommodation allotted to T.B. cases throughout the Union up to approximately 3,315 (705 for Europeans and 2,610 for non-Europeans), apart from any additional accommodation which may be provided in Mission Hospitals and other Institutions, as well as accommodation which will become available after the war in Hospitals at present being used by the Department of Defence.

The death-rate for Europeans was 36.2 per 100,000 of the population which is the same as the figure in 1939. So long as the nutritional needs of the population are met as at present there is not likely to be any marked increase, but in tuberculosis the incidence and death-rate are very markedly

increased if nutrition deteriorates. Although notifications are not an entirely reliable guide there is a steady increase in the number of such notifications.

## Europeans. Non-Europeans.

Year ended 30.6.42 ... ...	1,030	14,580
Year ended 30.6.43 ... ...	1,340	15,796

On the other hand cases are being reported at an earlier stage and the results of treatment are definitely much better. Thus in the report of the Medical Superintendent, Nelspoort Sanatorium, the following statement is made: "Of 267 patients where sputum contained tubercle bacilli on admission, 94 i.e. 35 per cent. had become negative on discharge."

By negative is meant that either no sputum was obtainable or that if sputum was obtainable no tubercle bacilli were found on ten (10) consecutive examinations and if any doubt existed tests on guinea pigs were negative.

## Type of Tuberculosis.

The following graphs show an analysis of the death-rates in 5 year periods among different age-groups. It will be noted that:—

(1) The death-rate among males is very definitely higher than among females.

(2) Both rates have markedly declined over a period 1913 to 1942.

(3) The age period in which the greatest death-rate from tuberculosis occurs varies.

(4) Among males the period with the highest rate at the beginning of the observation was 35 to 65 age groups. There has been a steady shift and for the 1938-42 period the age group mainly affected was the 45 and upwards group.

(5) The same trend is not observed among the females, and the age groups with maximum death-rates are still under 35. This is similar to what is found in other countries.

## Research.

Considerable research has been carried out by Dr. Dormer in Natal and the results of his work will be available shortly.

It is realised that the provision of more accommodation for tuberculosis will not solve the problems, but by the isolation of infectious cases and facilities for treatment, a very considerable contribution is made to the control of the disease.

The operating theatre erected at Nelspoort Sanatorium is being used. It has been possible to obtain the services of a surgeon expert on chest surgery from the Department of Defence who visits Nelspoort periodically. This service is much appreciated. It is hoped that the use of miniature radiography will help to discover early cases. Miniature x-ray outfits are on order for the tuberculosis dispensaries at Cape Town and Durban.

The two main lines of attack against tuberculosis are both part of the Department of Public Health, namely, nutrition and housing. The report of the National Nutrition Council will be published shortly. Very considerable work has been done in the way of surveys and research. A comprehensive survey of Bantu Nutrition by Kark and le Riche is being used by the nutrition section as a work of reference.

## Housing.

The Central Housing Board is making very special efforts in these days of difficulties to speed up housing and a long term policy is also being investigated. Owing to the shortage of supplies, building has been rather slow, but there is every indication of a speed up in the near future.

TABLE 17.—KING GEORGE V HOSPITAL, DURBAN: ADMISSIONS, DISCHARGES AND DEATHS.

Race.	Patients in Residence at 1/7/42.			Patients Admitted during Year.			Patients Discharged during Year.			Patients Died during Year.			Patients in Residence at 30/6/43.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
European.....	53	20	73	77	43	120	65	29	94	23	8	31	42	26	68
Coloured.....	15	9	24	11	5	16	8	4	12	10	1	11	8	9	17
Indian.....	19	12	31	33	12	45	18	6	24	11	7	18	23	11	34
Native.....	—	—	—	2	—	2	—	—	—	—	—	—	2	—	2
TOTAL.....	87	41	128	123	60	183	91	39	130	44	16	60	75	46	121

M.—Male.

F.—Female.

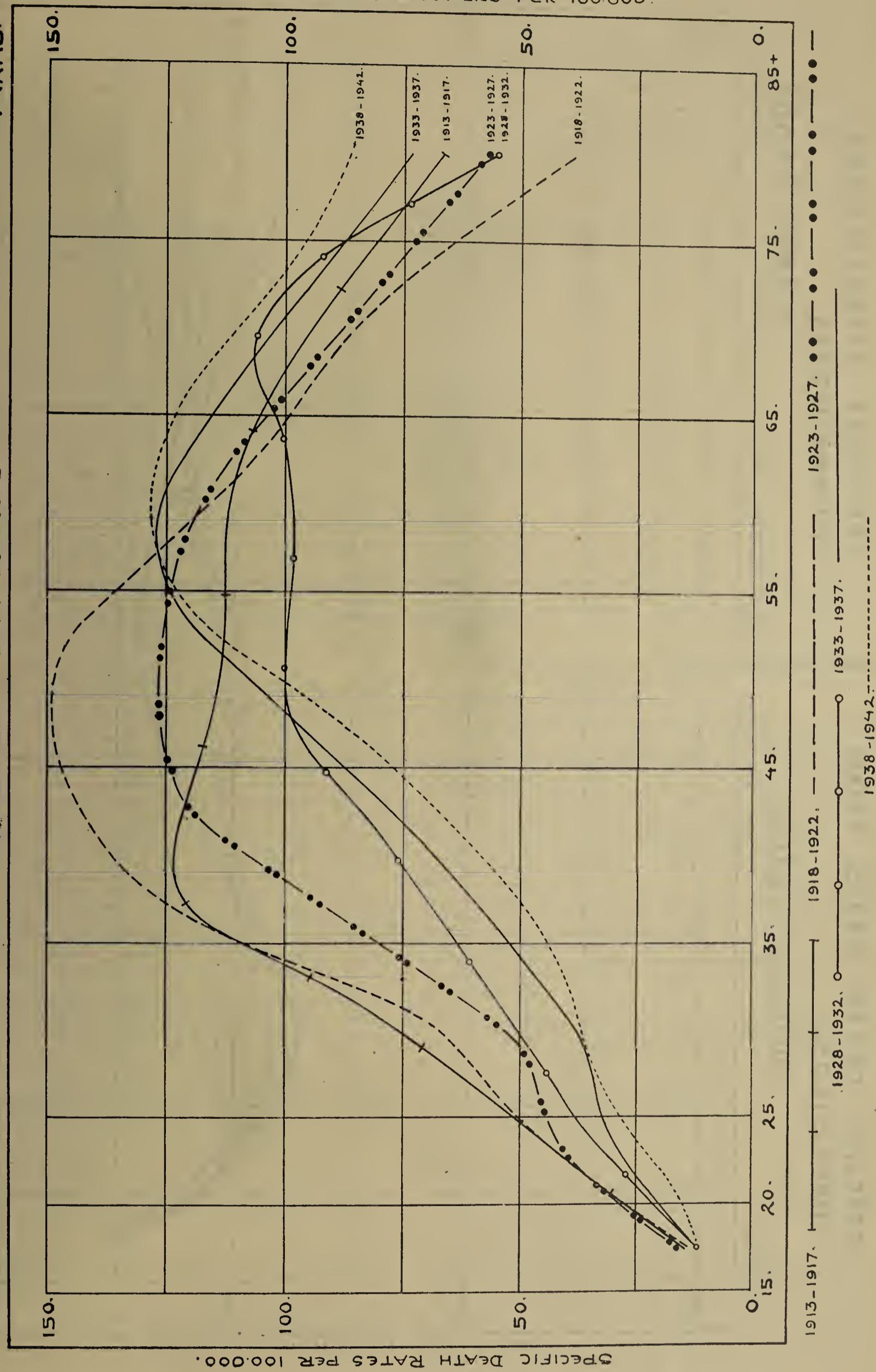
T.—Total.

**SPECIFIC TREATMENT KAISER WILHELM TUBERCULOSIS.**

EUROPEAN MALES

A bar chart comparing the percentage distribution of European males and blanketeers across five age groups: 15-24, 25-34, 35-44, 45-54, and 55-64. The y-axis represents the percentage from 0% to 10%. European males show a peak at 15-24 (approx. 10%) and a secondary peak at 25-34 (approx. 8%). Blanketeers show a more gradual increase, peaking at 45-54 (approx. 7%) and ending at 55-64 (approx. 5%).

Age Group	European Males (%)	Blanketeers (%)
15-24	10	4
25-34	8	5
35-44	6	6
45-54	5	7
55-64	4	5



SPECIFIC DEATH RATES FROM  
TUBERCULOSIS.

# SPESIFIKE STERFTESSYFFERS – TUBERKULOSIS.

## EUROPEAN FEMALES.

## FEMALES.

BLANKE VROUE.

UPS: LEFTYDSGROEPE: VROUW.

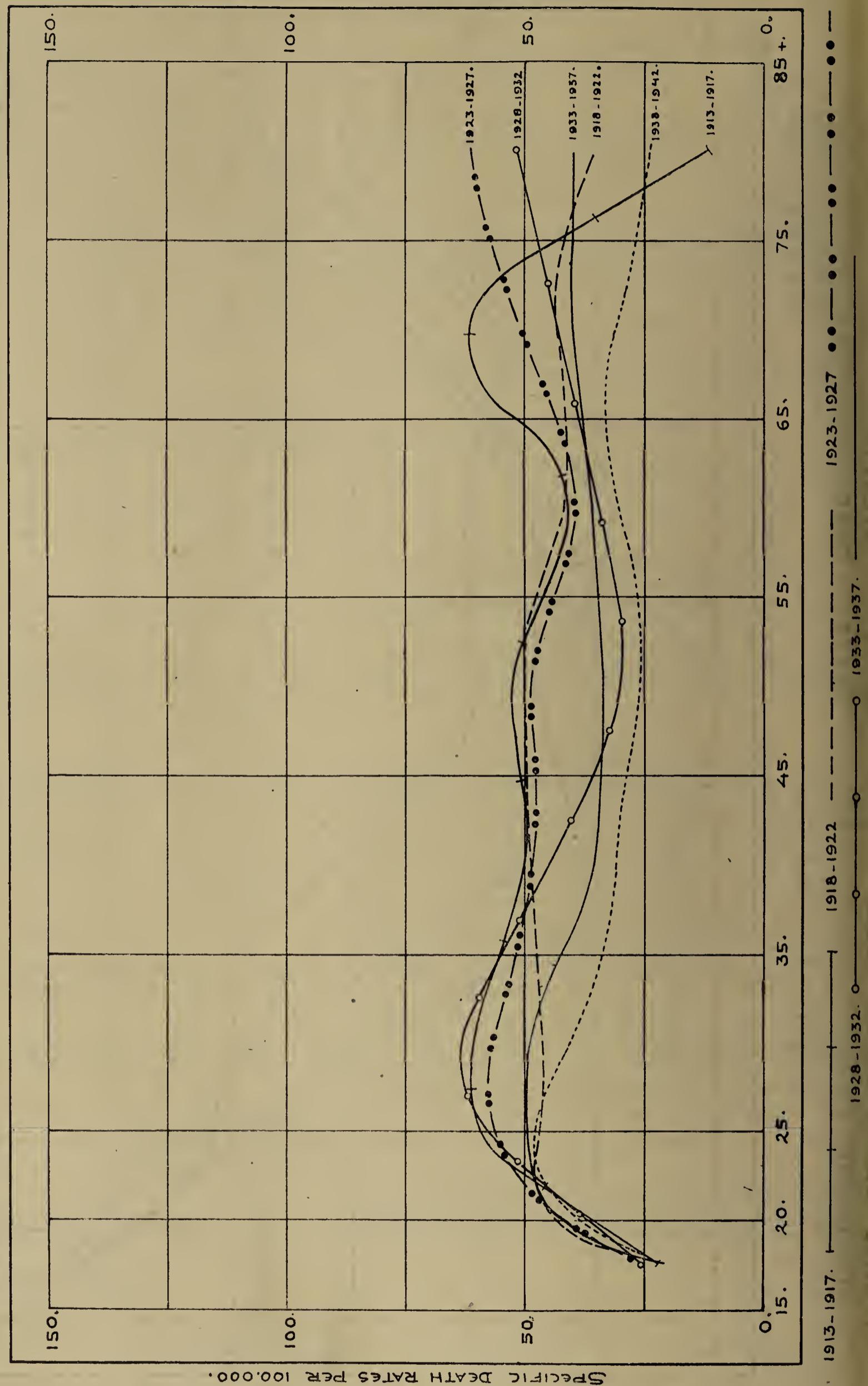


TABLE 18.—NELSPOORT SANATORIUM: ADMISSIONS, DISCHARGES AND DEATHS.

	Total.	Europeans.			Coloureds.			Military.		
		M.	F.	T.	M.	F.	T.	E.	C.	T.
In Sanatorium on 1/7/1942.	217	44	48	92	44	17	61	32	32	64
Admitted during year.....	427	95	80	175	88	83	171	74	7	81
Died during year.....	18	4	—	4	4	5	9	3	2	5
Discharged during year.....	407	90	85	175	99	58	157	38	37	75
In Sanatorium on 30/6/1943	219	45	43	88	29	37	66	65	—	65

TABLE 19.—RIETFONTEIN TUBERCULOSIS HOSPITAL: ADMISSIONS, DISCHARGES, DEATHS.

	Europeans.		Coloured.		Natives.		Asiatics.	
	M.	F.	M.	F.	M.	F.	M.	F.
	—	—	—	—	—	—	—	—
In Hospital, 1/7/1942.....	—	—	1	3	29	16	—	—
Admitted during year.....	—	—	4	8	65	42	2	2
Died during year.....	—	—	1	—	16	6	—	1
Discharges during year.....	—	—	2	7	51	33	2	1
In Hospital, 30/6/1943.....	—	—	2	4	27	19	—	—

## 11. TYPHOID OR ENTERIC FEVER.

In the annual report for last year reference was made to a very serious typhoid outbreak which occurred in Durban. This was largely due to milk borne infection. Investigation revealed that milk was, in at least one instance, being produced under unhygienic conditions. A large number of workers in suspected dairies were examined for the typhoid carrier state and several were found to have positive Vi tests. There is little doubt that the presence of typhoid carriers associated with insanitary conditions constitute a grave danger of infection of milk supplies. The incidence of the disease in Durban was again much higher than usual in the year under review.

A serious outbreak of typhoid fever, involving over 100 persons, occurred in Cape Town during April and May 1943. This too was traced to infected milk. The circumstances pointed to the probability of the milk from a certain dairy being infected and the workers at this dairy were examined for the typhoid carrier state. After lengthy investigation it was finally proved that one of the Native workers in this dairy was a carrier. Although in this individual the Vi test was positive actual proof of the carrier condition was only obtained after the examination of a very large number of specimens of stools and urine. Administrative action had, however, been taken immediately the positive Vi test was obtained and this was followed by a prompt reduction in the number of new cases and the termination of the outbreak.

These two outbreaks illustrate the dangers to which the community may be exposed by infected milk supplies. They indicate the need for the most meticulous care being exercised in the production and handling of milk and the desirability of all milk supplies being pasteurised and hygienically handled thereafter before being used for human consumption.

TABLE 20.—TYPHOID OR ENTERIC FEVER: DISTRIBUTION OF CASES REPORTED DURING THE YEAR ENDED 30TH JUNE, 1943.

Area.	European.		Non-European.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape Province (excluding Transkei)....	367	9	45	939	290	1,306
Transkei.....					299	152*
Natal.....	128	18	737	152*	865	276*
Orange Free State...	77	14	246	323	1,124	
Transvaal.....	320	47	804			
<b>TOTAL.....</b>	<b>901</b>	<b>124</b>	<b>3,016</b>	<b>152</b>	<b>3,917</b>	<b>276</b>

\* In respect of non-Europeans the deaths in the case of Asiatics and Coloureds only are shown.

In the above table no figures are shown for Native deaths as complete statistics are not available. The following list, however, indicates the deaths of Natives from enteric fever registered in the principal towns of the Union during 1942. These figures do not indicate the incidence of the disease in the towns concerned as they refer not only to cases infected in the respective towns but also include cases infected elsewhere and imported into those towns.

Cape Town ... ..	—	Boksburg ... ..	26
Port Elizabeth ...	3	Brakpan ... ..	1
East London ...	15	Germiston ... ..	15
Kimberley ... ..	—	Johannesburg ... ..	55
Pietermaritzburg	40	Krugersdorp ... ..	8
Durban ... ..	83	Nigel ... ..	1
Pretoria ... ..	21	Randfontein ... ..	2
Bloemfontein ... ..	2	Roodepoort ... ..	11
Benoni ... ..	5	Springs ... ..	9

The incidence of the disease is reflected in the following table.

TABLE 21.—TYPHOID OR ENTERIC FEVER: NOTIFICATIONS AND INCIDENCE IN LOCAL AUTHORITY AREAS IN WHICH 10 OR MORE CASES WERE NOTIFIED DURING THE YEAR ENDED 30TH JUNE, 1943 (ARRANGED IN ORDER OF INCIDENCE)—EXCLUDING CASES RETURNED AS "IMPORTED".

Local Authority.	Notifications.			Incidence per 1,000 of Population.		
	Euro-pean.	Non-Euro-pean.	Total.	Euro-pean.	Non-Euro-pean.	All Races.
Murraysburg, M.....	6	23	29	8·93	25·41	18·39
Umtata, M.....	4	84	88	1·68	26·32	15·81
Jansenville, M.....	—	12	12	—	10·93	6·84
Burghersdorp, M.....	8	20	28	4·16	7·15	5·93
Alice, M.....	—	17	17	—	7·67	5·83
Ventersdorp, M.....	2	11	13	1·74	9·14	5·53
Beaufort West, M.....	9	35	44	2·49	7·29	5·48
Kroonstad, M.....	11	58	69	1·86	7·21	4·95
Malmesbury, M.....	2	18	20	·84	7·89	4·28
Edendale, L.H.C.....	—	23	23	—	3·75	3·71
Hercules, M.....	39	22	61	5·48	2·07	3·43
Heilbron, M.....	1	12	13	·65	4·89	3·26
Fort Beaufort, M.....	5	13	18	3·40	2·85	2·98
Montagu, M.....	2	8	10	·97	5·56	2·85
Upington, M.....	4	13	17	1·49	3·28	2·55
Bethlehem, M.....	3	23	26	·57	4·28	2·45
Graaff-Reinet, M.....	5	22	27	1·14	2·92	2·27
Alexandra, H.C.....	—	36	36	—	2·15	2·15
Ficksburg, M.....	5	6	11	1·99	2·28	2·14
Cradock, M.....	6	12	18	1·51	2·15	1·88
Aliwal North, M.....	3	11	14	1·20	2·16	1·85
Vreuning, M.....	1	32	33	·11	2·26	1·42
Uitenhage, M.....	2	27	29	·21	2·42	1·41
Queenstown, M.....	1	24	25	·13	2·08	1·29
Durban, M.....	88	242	330	·84	1·43	1·20
Kingwilliamstown, M.....	1	9	10	·18	1·86	·96
Cape Town, M.....	124	115	239	·79	·72	·75
Pretoria, M.....	58	31	89	·58	·73	·62
Roodepoort—Maraisburg, M.....	11	18	29	·63	·50	·54
Springs, M.....	11	35	46	·49	·41	·43
Pietermaritzburg, M.....	8	14	22	·29	·52	·40
Johannesburg, M.....	64	131	195	·23	·52	·37
Germiston, M.....	6	22	28	·18	·46	·35
East London, M.....	2	20	22	·06	·62	·34
Benoni, M.....	3	25	28	·14	·39	·33
Boksburg, M.....	2	13	15	·11	·35	·27
Krugersdorp, M.....	2	13	15	·10	·29	·23
Bloemfontein, M.....	7	4	11	·26	·12	·19
Brakpan, M.....	1	10	11	·04	·23	·16
Port Elizabeth, M.....	6	11	17	·11	·19	·15

M. = Municipality; H.C. = Health Committee; L.H.C. = Local Health Commission.

## 12. TYPHUS OR RICKETTSIOSIS.

The incidence of typhus has been considerably greater than in recent years. As is usual the great majority of cases occurred in the Cape Province where there were 2,687 cases and 51 districts were affected, mainly in the Native territories of the Transkei and Ciskei. It is noteworthy, however, that as many as 145 cases with 16 deaths were notified from the Transvaal, mainly from farms in the high veld areas of the eastern Transvaal. In the annual report of two years ago attention was drawn to the fact that there seemed to be a tendency for the typhus case mortality rate to rise. The rate this year of 18·1 per cent., although higher than in many previous years, is within normal limits. As has repeatedly been pointed out typhus is associated with poverty, dirt and lousiness and its constant occurrence in some parts of the country is a serious reflection on the living conditions of the Natives in those areas. The disease will not be stamped out until great improvement has taken place in the economic and social conditions and the general standard of cleanliness of these people.

TABLE 22.—TYPHUS FEVER: CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1943.

Province.	Number of Districts in which Outbreaks Occurred.	European.		Non-European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	51	18	2	2,669	497	2,687	499
Natal.....	11	8	1	58	—	66	1
Orange Free State	4	—	—	21	5	21	5
Transvaal.....	7	1	—	144	16	145	16
<b>UNION.....</b>							

this fundamental fact is essential to the control of the condition. The other essential point is that venereal disease must be treated early and thoroughly if its spread is to be controlled and its devastating consequences are to be avoided. The Department continues to give close attention to this matter and the free treatment of cases of venereal disease is one of the primary duties of District Surgeons except in those large local authority areas where the municipalities maintain venereal disease clinics.

As will be seen from table 23 the patients treated in hospitals numbered 728 Europeans and 17,923 Non-Europeans

TABLE 23.—VENEREAL DISEASES CASES TREATED AND ATTENDANCES, YEAR ENDED 30TH JUNE, 1943.

Locality.	IN HOSPITAL.						OUTDOOR.					
	Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.		Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.	
	Europ- ean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.
(1) BY DISTRICT SURGEONS.												
Cape.....	42	1,224	18	308	60	1,532	478	21,305	451	2,752	929	24,057
Natal.....	15	1,267	17	351	32	1,618	100	25,114	97	2,444	197	27,558
Transvaal.....	13	3,100	38	328	51	3,428	321	26,268	282	2,156	603	28,424
Orange Free State.....	—	231	—	19	—	250	240	10,040	140	1,303	380	11,343
TOTAL.....	70	5,822	73	1,006	143	6,828	1,139	82,727	970	8,655	2,109	91,382†
(2) AT INSTITUTIONS AND CLINICS.												
Alexandra.....	—	—	—	—	—	—	—	8,116	—	—	—	8,117
Adelaide.....	—	—	—	—	—	—	—	352	—	—	—	352
Aliwal North.....	—	—	—	—	—	—	—	1,303	—	—	—	1,303
Barberton.....	—	657	—	—	—	657	—	—	—	—	—	—
Beaufort West.....	—	—	—	—	—	—	—	1,302	—	—	—	1,302
Benoni.....	—	—	—	—	—	—	—	395	5,911	11	31	406
Bethlehem.....	—	45	—	10	—	55	—	391	—	32	—	423
Bethulie*.....	—	—	—	—	—	—	—	—	—	—	—	—
Bloemfontein.....	8	233	57	35	65	268	747	9,183	25	—	772	9,183
Bochem.....	—	968	—	3	—	971	—	556	—	—	—	556
Boksburg.....	—	—	—	—	—	—	—	417	5,099	40	36	457
Brakpan.....	—	—	—	—	—	—	—	114	4,558	—	29	114
Cape Town.....	73	98	73	134	146	232	11,838	36,526	3,871	9,228	15,709	45,754
Cape Divisional Council.....	—	—	—	—	—	—	—	543	5,520	35	181	578
Darling.....	—	—	—	—	—	—	—	1	21	—	1	22
De Aar.....	—	—	—	—	—	—	—	284	—	—	—	284
Durban (Addington).....	181	—	241	—	422	—	3,330	—	2,853	—	6,183	—
East London.....	—	—	—	—	—	—	—	432	6,158	206	601	6,759
Elim.....	—	272	—	43	—	315	—	—	—	—	—	—
Ficksburg.....	—	—	—	—	—	—	—	418	—	—	—	418
Fraserburg*.....	—	—	—	—	—	—	—	—	—	—	—	—
Germiston.....	—	—	—	—	—	—	—	1,911	5,919	1,317	50	3,228
Gordons Bay.....	—	—	—	—	—	—	—	168	—	—	—	168
Hanover.....	—	—	—	—	—	—	—	218	—	6	—	224
Heilbron*.....	—	—	—	—	—	—	—	—	—	—	—	—
Hercules.....	—	—	—	—	—	—	—	5,659	—	26	—	5,685
Jansenville*.....	—	—	—	—	—	—	—	—	—	—	—	—
Johannesburg.....	—	—	—	—	—	—	—	6,882	§	1,768	§	8,650
Kenhardt.....	—	—	—	—	—	—	—	45	—	—	—	45
Kimberley.....	1	209	—	195	1	404	269	6,057	8	416	277	6,473
King Edward VIII (Durban).....	—	2,919	—	2,468	—	5,387	—	21,538	—	11,052	—	32,590
Kingwilliamstown.....	—	130	—	2	—	132	10	257	—	—	10	257
Kokstad.....	—	—	—	—	—	—	—	3,157	—	—	—	3,157
Kroonstad.....	—	—	—	—	—	—	—	735	—	—	—	735
Krugersdorp.....	—	—	—	—	—	—	—	2,375	—	11	—	2,386
Kuruman.....	—	—	—	25	—	25	—	1,423	—	—	—	1,423
Lichtenburg.....	—	—	—	—	—	—	—	292	—	20	—	312
Molteno.....	—	—	—	—	—	—	—	682	—	—	—	682
Mossel Bay.....	—	—	—	—	—	—	—	196	—	57	—	253
Nelspruit.....	—	—	—	—	—	—	—	75	—	—	75	—
Newcastle*.....	—	—	—	—	—	—	—	—	—	—	—	—
Oliphantshoek.....	—	—	—	—	—	—	—	516	—	25	—	541
Oudtshoorn.....	—	—	—	—	—	—	—	514	4,538	9	514	4,547
Paarl.....	—	—	—	—	—	—	—	20	509	—	12	20
Paarl Divisional Council.....	—	—	—	—	—	—	—	—	—	—	—	—
Pietermaritzburg.....	—	1,150	—	624	—	1,774	243	11,675	60	1,686	303	13,361
Pietersburg.....	—	—	—	—	—	—	—	1,065	—	—	—	1,065
Piet Retief.....	—	114	—	33	—	147	—	141	—	54	—	195
Port Elizabeth.....	—	—	—	—	—	—	—	1,545	11,947	181	966	1,726
Port Shepstone.....	—	—	—	—	—	—	—	239	—	—	—	239
Potchefstroom.....	—	—	—	—	—	—	—	1,823	—	—	—	1,823
Pretoria.....	—	—	—	—	—	—	—	3,416	21,500	984	2,424	5,400
Randfontein.....	—	—	—	—	—	—	—	1,408	—	6	—	1,414
Rietfontein.....	44	4,644	50	2,466	94	7,110	—	2,089	—	—	13	2,102
Rustenburg.....	—	—	—	—	—	—	—	2,089	—	8	—	267
Sekukuniland.....	—	211	—	2	—	213	—	259	—	—	—	—
Senekal*.....	—	—	—	—	—	—	—	—	—	—	—	—
Springs.....	—	—	—	—	—	—	—	918	14,265	206	3,154	17,419
Stanger.....	—	—	—	—	—	—	—	104	—	8	—	112
Standerton.....	—	—	—	—	—	—	—	31	—	—	—	31
Stellenbosch*.....	—	—	—	—	—	—	—	—	—	—	—	—
Stellenbosch Divisional Council.....	—	—	—	—	—	—	—	1,451	—	—	—	1,451
Sterkstroom.....	—	—	—	—	—	—	—	58	—	—	—	58
Steynsburg.....	—	—	—	—	—	—	—	152	—	—	—	152
Swellendam.....	—	27	—	1	—	28	—	87	—	—	—	87
Tulbagh.....	—	—	—	—	—	—	—	302	—	—	—	302
Uitenhage.....	—	46	—	21	—	67	—	2,150	—	5	—	2,155
Umtata.....	—	—	—	—	—	—	—	99	—	28	—	127
Vereeniging.....	—	—	—	—								

though the Government desired to maintain and, if possible, to increase the provision of housing under the Housing Act, the difficulties in the way of local authorities desiring to carry out schemes have been very great.

When war broke out galvanised iron was the usual roofing material most readily available for economic and sub-economic housing schemes. The use of galvanised iron for the roofing of houses had to be abandoned at a very early stage in the war as this material had to be earmarked for Defence requirements. The Board arranged in lieu thereof for dwellings to have what is known as the precast single unit concrete asphaltic type of roofing. This type of construction was found to be very suitable, particularly for the small local authority in whose area there was a shortage of really skilled workmen. Unfortunately, just as the new type of roofing material was beginning to bring relief to local authorities, it was brought to an end by malthoid being frozen for Defence purposes and many months went by in evolving and educating local authorities to the use of another alternative, which involved the use of concrete members including roofing tiles. The design was tried out and proved to be cheap, attractive in appearance and eminently suitable for both European economic and sub-economic types of buildings with or without ceilings. Where ceilings were required it was found that they could be made of South African manufactured cement asbestos fixed to asbestos bearers. The new roofing received the approval of the Control Office but no sooner had it been introduced to local authorities and was beginning to be adopted when the Controller had to limit its use owing to an unforeseen shortage or reinforcing steel. The Board has now evolved a further type of roof consisting of precast concrete asphaltic type of construction with malthoid strips merely over the joints. This, it is hoped, the Controller of Building Materials will be able to allow. Further, with the decline of Defence requirements limited quantities of iron for roofing purposes and cement asbestos roofing material are coming into production.

Large local authorities have found it difficult enough to comply with the varying requirements of the Control Office, but small local authorities with no technical staffs of their own and dependent on consultants in private practice, often residing in distant towns, have found it almost impossible to get ahead with their schemes.

Apart from the difficulties caused by lack of imported building materials it has to be recognised that far too lengthy procedures have to be followed before a scheme can be commenced, even under ordinary conditions. In wartime these are greatly multiplied. The following steps are now required of local authorities desiring to carry out schemes:—

- (1) Application by local authority for an allocation of funds.
- (2) Recommendation by Central Housing Board for approval of allocation by Administrator.
- (3) Approval by local authority of scheme prepared.
- (4) Submission of scheme to Central Housing Board and application for loan to carry it out.
- (5) Recommendation by Central Housing Board to Provincial Administration for approval.
- (6) Referred to Townships Board by Provincial Administration for approval of layout which has already been approved, after in many cases revision by the Central Housing Board.
- (7) If a Native scheme, approval by Minister of Native Affairs is also required.
- (8) Application to Chairman, Municipal and Public Utilities Building Advisory Committee for approval.
- (9) Referred to Deputy Controller of Building Materials for permit to build.
- (10) Application to Local Divisional Inspector of Labour for sanction to utilise required man-power.

When it is realised that a scheme may stick or be delayed at any one point and often is so delayed, the exasperation felt by some local authorities can readily be appreciated. The Central Housing Board has done its best to shorten these procedures but without avail. In fact, the Central Housing Board has generally been blamed wherever a scheme has been held up although as a rule it has in no way been responsible. It would seem desirable that a Committee should be appointed by the Government to suggest amendments to the Housing Act and any other legislation or administrative action which is impeding the carrying out of housing schemes thereunder.

TABLE 24.—HOUSING ACT NO. 35 OF 1920: WORKING FROM PROMULGATION, 16TH AUGUST, 1920, TO 30TH JUNE, 1943.

Province.	Loan Applications Approved.			Loan Issues.	Number of Houses.					
	European.	Non-European.	Total.		Com- plete.	Under Con- struc- tion.	Ap- proved, but not yet com- menced.	Total.	Total for European Occupation.	Total for Non- European Occupation.
(A) Economic Housing.										
Cape.....	£2,006,446	£668,949	£2,675,395	£2,540,358	7,500	152	599	8,251	3,174 (a)	5,077 (b)
Natal.....	641,156	277,503	918,659	723,535	1,124	87	256	1,467	599	868 (c)
Orange Free State.....	731,272	20,618	751,890	742,076	1,819	374	383	2,576	936 (d)	1,640 (e)
Transvaal.....	2,793,015	293,484	3,086,499	2,947,734	5,132	211	620	5,963	3,458	2,505 (f)
TOTAL.....	6,171,889	1,260,554	7,432,443	6,953,703 (g)	15,575	824	1,858	18,257	8,167	10,090
(B) Sub-Economic Housing.										
Cape.....	1,246,971	4,742,623	5,989,594	4,044,610	8,798	1,652	7,111	17,561	2,595	14,966
Natal.....	6,824 (h)	1,322,176	1,329,000	513,016	676	106	2,269	3,051	—	3,051
Orange Free State.....	24,900	96,675	121,575	34,187	274	11	22	307	48	259
Transvaal.....	1,375,499	3,227,007	4,602,536	3,038,576	7,962	1,035	4,497	13,494	1,743	11,751
TOTAL.....	2,654,194	9,388,481	12,042,675	7,630,369	17,710	2,804	13,899	34,413	4,386	30,027
(C) Housing of Aged Poor.										
Cape.....	21,229	16,973	38,202	33,130	250	—	38	288	146	172
Natal.....	25,000	—	25,000	25,000	50	—	—	50	50	—
Orange Free State.....	41,425	—	41,425	34,200	49	6	21	76	76	—
Transvaal.....	27,500	—	27,500	8,681	8	3	12	23	23	—
TOTAL.....	£115,154	£16,973	£132,127	£101,011	357	9	71	437	265	172
TOTAL: (A), (B) AND (C)....	£8,941,237	£10,666,008	£19,607,245	£14,685,088	33,642	3,637	15,828	53,107	12,818	40,289

(a) Includes a hostel to accommodate 86 persons.

(b) Includes 1,337 single rooms in blocks, 8 barracks and 160 flats.

(c) Includes 3 barracks and 36 single rooms in blocks.

(d) Includes a hostel for European girl employees at Bloemfontein.

(e) Includes 24 single rooms in blocks, the balance of 1,616 representing the approximate number of dwellings to be built out of a total loan of £20,118 made to three local authorities for use exclusively in purchasing materials to be advanced to Coloured persons and Natives building their own homes.

(f) Includes 303 single rooms in blocks, 3 compounds and 13 hostels.

(g) Includes £2,503,150 re-issued out of repaid capital.

(h) Sub-economic Loan to complete Aged Poor Scheme at Sydenham, Durban.

## 2. RURAL AND PERIUBAN SANITARY CONDITIONS.

Slow but steady progress has been made during the year in the implementation of the recommendations of the Urbanised Areas Administration Committee the report of which was published early in 1940.

In Natal several new health committees have been established, and one further Public Health Area, namely Clermont, has been proclaimed and placed under the control of the Local Health Commission established under the provisions of Ordinance No. 20 of 1941, with promising results. The question of introducing proper control in respect of a number of other areas, particularly those referred to by the Urbanised Areas Administration Committee is being investigated by the Commission.

In so far as the Cape Province is concerned reasonably satisfactory progress has been made in giving effect to the recommendations of the Committee. In particular, Winder-niere, referred to in paragraph 98 of the Committee's report, has been included in the Municipality of Cape Town. Further, following upon the amalgamation of the Municipalities of Cambridge and East London, the Provincial Administration has now published a draft ordinance to provide for the inclusion of Amalinda, Woodbrook and Abbotsford in the Municipality of East London. For various reasons, however, it has not yet been possible to implement the recommendations of the Committee in respect of the worst area dealt with by it in the Cape Province, namely, Bethelsdorp, near Port Elizabeth.

In the case of the Orange Free State it is a matter for regret that little progress in connection with the improvement of the conditions prevailing in the periurban areas of Bloemfontein can be recorded.

In the Transvaal an ordinance to establish a Periurban Areas Health Board has been passed by the Provincial Council and is at present awaiting the assent of the Governor-General. Meanwhile four health inspectors continue to operate in the periurban areas of Pretoria and the Witwatersrand including those of Witbank and Middelburg.

With regard to areas in the Union where Railway reserves are specially concerned it is proposed to appoint a committee to recommend the precise form of control to be introduced.

It is not yet possible to record any material progress in the direction of ensuring the provision of satisfactory water supplies for seaside resorts particularly in respect of the South Coast areas of Natal because of the demands upon the Department of Irrigation for purposes connected with the prosecution of the War.

### 3. NATIVE HEALTH SERVICES.

During the early months of 1943 a second Native Health Unit was established at Bushbuckridge in the low veld of the Eastern Transvaal. The unit is in an area in the Pilgrims Rest magisterial district where there are a number of farms which have been purchased by the Native Trust Account for the settlement of Natives. The Native population in this region is very considerable and it seems likely that it will increase. The Natives are not as advanced as in many other rural areas and the need for instruction and improvement in living conditions is very pressing. The principal object of the unit is instructional rather than curative. An endeavour will be made to inculcate into the Native mind ideas of simple hygiene, to encourage the growing and use of vegetables and generally bring about an improvement in living conditions while at the same time providing a rational explanation of disease processes. The work is being carried out in close collaboration with the Department of Native Affairs and the Provincial Education Department. The unit has only been in operation for a few months and it is as yet too soon to judge its progress.

The Polela Health Unit is now well established and the year under review has been one of rapid progress and has seen the stabilisation of certain activities and a general expansion in all branches of the work. The progress which has been made has undoubtedly been determined by the fact that health needs have been visualised in their relation to general social background, and where-ever practicable the field and clinic staff have taken an active interest in the family, its home and its problems. The medical staff has been increased by the appointment of a part-time assistant medical officer necessitated by the growth of clinics, the expansion of field work and other duties. The expansion of clinics has been very great during the year and the distances which natives travel to attend the venereal disease clinics often at great inconvenience, indicate how much this treatment is appreciated. A special weekly clinic for mothers with their babies and children of pre-school age is now well established. It is attended by healthy children referred from the general clinics after treatment and by children whose mothers have been attended during the ante-natal period. All the children are weighed and the mothers are given advice on feeding, hygiene and general care of their children while vaccination against smallpox and immunization against enteric are carried out as a routine. The babies who attend regularly are a striking contrast to those seen at the other clinics.

The unit has had a considerable measure of success in encouraging the growth and consumption of vegetables by the Natives. Its endeavours to encourage the use of milk, however, have been less successful. Despite the fact that the area is said to be overstocked with cattle the ownership of stock is unevenly distributed resulting in the fact that even in the best months of the year many of the families have no milk while during the months of June to September the great majority of the homes are without it. In addition to this the average milk yield of the cows is very small. Repeated examinations of school children have given an opportunity for the study of growth trends and signs of retarded growth. Preliminary analysis of the figures indicates a seasonal loss of weight in many children during the period August to October. This corresponds with the time of the year when milk and vegetables are scarce. The loss is actual and not merely a retardation in the rate of increase. The unit continues to organise weekly school meals in primary schools. The main contribution comes from its own vegetable garden while the schools and children add their small quota. These meals are of considerable value from an educational point of view. Considerable progress has been made in encouraging the making of compost both as a means of disposing of household, animal and other refuse and as a source of manure for the soil.

The Umtata Rural Clinics scheme, which was inaugurated in January 1941 and fully described in the annual report for that year, is continuing to render very useful service. The establishment of this scheme was made possible through the generosity of the Native Recruiting Corporation which gave financial assistance to it over a period of three years. As from the beginning of the current financial year, April

1st 1943, the scheme has been taken over by the Department which is now entirely responsible for it. The doctor in charge has been appointed to the staff of the Department. In addition to the attention to minor ailments which is given daily at all the clinics there is a steady increase in ante-natal attendances and in mothers seeking advice regarding their children. Home visits are carried out by the nurses from the various clinics to give the usual district nursing services and also to try to raise the general standard of living. Records of these visits are kept with the object of gaining a picture of the home environment. The policy of trying to raise the general standard of health by influencing the daily lives of the people is still being followed. With the assistance of two Medical Aids, who have recently been attached to the scheme, a great deal of attention is being given to the welfare of school children. Regular examinations are made, minor ailments are treated and the children's progress is watched. In many cases home conditions are investigated and the children's health is discussed with the parents. Discussions are held on health matters at the schools and opportunities are taken for health propaganda. Demonstration gardens are flourishing at several of the schools.

In September, 1942, the Transkeian Co-ordinating Welfare Committee was formed for the purpose of co-ordinating all health and other social services for the improvement of the people of the Transkeian Territories. This committee consists of a number of senior officials from various Government departments in Umtata with members of the medical profession, missionaries, teachers and other sympathetic members of the public, including Natives and Coloureds. It meets quarterly, under the chairmanship of the Chief Magistrate, to discuss social problems in the Transkei and to make recommendations to the Administration. Sub-Committees have been appointed and papers prepared dealing with Health Services, Agriculture, Education, Afforestation & Fuel, Social and Economic Problems. Local Health Committees have been formed in every village in the Transkei and these Committees submit recommendations in respect of their particular problems to the Central Committee. Six meetings of the Central Committee have been held; each has been well attended and the discussions have been of value to all concerned. The closer co-operation between the various departments and between those departments and the public should materially assist in co-ordinating social services, including those of a public health nature, in the Transkeian Territories.

### 4. CAPRIVI ZIPFEL: HEALTH SURVEY.

As the Union Government has recently taken over the administration of the eastern portion of the Caprivi Zipfel through the Department of Native Affairs an investigation of health conditions in this territory has been carried out. An officer of the Union Health Department visited the area in June, 1943, and has submitted an interesting report. The country is flat and sandy and consists of two types, one of which is liable to inundation during the wet season by the large rivers bounding the area while the other portion, the forest country, is drier and not subject to flooding. The Native population, which is estimated at 11,000, is congregated in a number of small villages each under its own headman.

The crops grown by the Natives are chiefly maize and millet with small quantities of vegetables such as pumpkins, sweet-potatoes, monkey-nuts, calabashes, cassava and beans. The Natives have cattle and milk is used especially by the children. Fish is apparently plentiful in the vicinity of the rivers. The dwellings are primitive and in the inundated areas are largely constructed of reeds while wood is used in the forest country.

Intestinal diseases such as dysentery and diarrhoea are prevalent owing to lack of sanitation while chest diseases are common in the colder part of the year. The infantile mortality rate is probably very high. Malaria is highly endemic but, as so often happens, the Natives have acquired a considerable degree of immunity to it at the expense of some deterioration of the general constitution. Cases of venereal diseases were found in many villages. Several cases of leprosy were seen, and there seemed to be no tendency to hide the disease. Since the investigation arrangements have been made for the lepers to be removed to the Southern Rhodesian Government Leper Institution at the cost of this Department and in accordance with a financial arrangement made with the Government of Southern Rhodesia. Goitre of a non-toxic type is prevalent in certain areas; the cause of this condition requires further investigation.

### 5. INFANT WELFARE.

Tables 25 and 26 show the infantile mortality rates for Europeans and those for Coloureds and Asiatics respectively. The European infantile death rate is the lowest on record for the Union. This rate has fallen steadily during the last 20 years. Infantile mortality rate is always regarded as a useful index of the public health state of the community because a large proportion of infantile deaths are preventable. Statistical evidence shows that the greatest cause of deaths among infants was diarrhoea and enteritis, which is eminently preventable, while bronchitis and pneumonia, which are also extremely important, are largely preventable by the improvement of living conditions and by better nursing and

anothercraft. Neo-natal deaths, those occurring during the first month, are, as in other countries, largely due to prematurity, congenital debility and birth injuries. Many of these deaths could be prevented by better pre-natal care, better midwifery and better post-natal services. Thus, although the lower infantile mortality rate is a matter for satisfaction, there is still much scope for improvement.

The death rate among Asiatic infants is very considerably higher than that among Europeans while the mortality among Coloured children, as reflected in the table, is extremely high. There is some doubt, however, whether the figures for Coloureds can be regarded as entirely accurate as it seems possible that registration of births among this class of the

community is still somewhat incomplete, a factor which would exaggerate the infantile mortality rate.

Courses for the training of non-European health visitors are being conducted by the Technical Colleges at both Cape Town and Johannesburg this year. Similar courses have previously been run at Cape Town on three occasions. The Department wishes to encourage the training and employment of more non-European health visitors who can do very valuable work among their own people. With this object in view the Department gives a grant to the Trained Nurses Association which selects suitable candidates whom it assists financially by the payment of fees, living and other expenses. The trainees are expected to contribute towards the course.

TABLE 25.—EUROPEAN INFANTS: BIRTHS AND DEATHS UNDER ONE YEAR REGISTERED AND INFANTILE MORTALITY RATE, I.E. DEATH RATE PER 1,000 LIVE BIRTHS, 1919-1942.

Year.	Cape.			Natal.			Transvaal.			Orange Free State.			Union.		
	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.
1919.....	16,749	1,351	80·66	2,910	191	65·64	15,338	1,326	86·45	4,727	382	80·81	39,724	3,250	81·81
1920.....	18,425	1,654	89·77	3,256	235	72·17	16,768	1,576	93·99	4,996	448	89·67	43,445	3,913	90·07
1921.....	18,062	1,382	76·51	3,370	203	60·24	16,582	1,374	82·86	5,288	379	71·67	43,302	3,338	77·09
1922.....	18,248	1,294	70·91	3,294	180	54·64	16,370	1,292	78·92	4,920	357	72·56	42,832	3,123	72·91
1923.....	18,296	1,353	73·95	3,229	197	61·01	15,619	1,261	80·74	5,037	328	65·12	42,181	3,139	74·42
1924.....	18,730	1,296	69·19	3,410	273	80·06	15,287	1,171	76·60	4,919	382	77·66	42,346	3,122	73·73
1925.....	18,366	1,343	73·12	3,509	206	58·71	16,348	1,059	64·78	5,188	361	69·58	43,411	2,969	68·39
1926.....	18,675	1,196	64·04	3,588	189	52·68	16,304	1,186	72·74	5,309	273	51·42	43,876	2,844	64·82
1927.....	18,537	1,293	69·75	3,435	166	48·32	17,050	1,359	79·71	5,325	314	58·97	44,347	3,132	70·63
1928.....	18,032	1,240	68·77	3,514	184	52·36	17,949	1,370	76·33	5,318	365	68·63	44,813	3,159	70·49
1929.....	19,008	1,169	61·50	3,650	177	48·49	18,227	1,342	73·63	5,334	280	52·49	46,219	2,968	64·22
1930.....	19,468	1,332	68·37	3,641	159	43·65	19,108	1,386	72·54	5,317	300	56·42	47,534	3,177	66·84
1931.....	19,180	1,182	61·63	3,538	162	45·79	18,733	1,267	67·65	4,975	317	63·72	46,423	2,928	63·07
1932.....	18,284	1,205	65·90	3,373	204	60·48	18,376	1,402	76·30	4,911	271	55·18	44,944	3,082	68·57
1933.....	17,931	995	54·49	3,441	166	48·24	18,452	1,266	68·61	4,695	299	63·68	44,519	2,716	61·01
1934.....	17,642	1,022	57·93	3,310	157	47·43	19,327	1,279	66·18	4,599	270	58·71	44,878	2,728	60·79
1935.....	18,242	1,016	55·70	3,441	167	48·53	21,109	1,537	72·81	4,925	277	56·24	47,717	2,997	62·81
1936.....	18,162	980	53·96	3,606	189	52·41	22,192	1,454	65·52	4,670	249	53·32	48,630	2,872	59·06
1937.....	18,404	1,012	54·99	3,766	175	46·47	23,814	1,439	60·43	4,894	252	51·49	50,878	2,878	56·57
1938.....	18,727	962	51·37	3,886	193	49·67	24,568	1,322	53·81	4,884	214	43·82	52,065	2,691	51·69
1939.....	19,022	984	51·73	4,056	151	37·23	25,795	1,304	50·55	4,644	209	45·00	53,517	2,648	49·48
1940.....	19,091	872	45·68	4,218	224	53·11	26,383	1,431	54·24	4,747	198	41·71	54,439	2,725	50·06
1941.....	19,026	884	46·46	4,361	180	41·27	26,711	1,481	55·74	4,471	226	50·55	54,569	2,779	50·93
1942.....	19,422	958	49·38	4,445	202	45·44	27,615	1,298	47·00	4,661	212	45·48	56,143	2,670	47·52

TABLE 26.—INFANTILE MORTALITY: ASIATICS AND MIXED, 1942.

Province.	Asiatics.			Mixed and other Coloured.		
	Live Births.	Infantile Deaths.	Rate per 1,000 Births.	Live Births.	Infantile Deaths.	Rate per 1,000 Births.
Cape.....	392	38	96·94	33,814	5,994	177·26
Natal.....	8,370	734	87·69	810	85	104·94
Transvaal.....	1,500	135	90·00	1,728	332	192·13
Orange Free State.....	—	—	—	279	61	218·64
UNION.....	10,262	907	88·38	36,631	6,472	176·68

### 6. MATERNAL WELFARE.

Table 27 shows that the European maternal mortality rate has increased slightly this year from the figure of last year, which was much the lowest ever recorded in the Union. It is particularly in regard to deaths due to puerperal sepsis that a considerable reduction has taken place during the last few years. Of 56,143 European births during the year 20,131 took place in institutions representing 35·9 per cent. It is noteworthy that the percentage of European births in institutions has increased very markedly during the last decade. In 1932 only 6,816 or 15·2 per cent. of such births took place in institutions. It seems highly probable that this is an important factor in the reduction of the maternal mortality rate which has occurred during this period. Table 28 indicates that the maternal mortality rates for Asiatics and Coloureds, and particularly the former, are not nearly as satisfactory as that for Europeans.

Supervision of midwives in the smaller urban areas still leaves much to be desired although there has been a slight improvement in the keeping of the lists of midwives. The Department does not recommend the listing of untrained midwives but local authorities still find it necessary to permit them to practise especially among non-Europeans. This might not be necessary if more local authorities would establish district nursing and midwifery services in their areas. At present only 23 maintain such services for non-Europeans and only 2 maintain them for Europeans. The total number of areas prescribed in terms of section thirty-nine (b) of the Medical, Dental and Pharmacy Act is 5, no areas having been prescribed during the year. The midwifery regulations were applied to the Divisional Council area of Tulbagh during the year.

TABLE 27.—MATERNAL MORTALITY: EUROPEANS.

Year.	Live Births Registered.	Deaths due to Puerperal Causes.					
		Number.		Rates per 1,000 Live Births.			
		Puerperal Sepsis.	Other Puerperal Causes.	Puerperal Sepsis.	Other Puerperal Causes.	Total Puerperal Mortality.	
1926...	43,876	88	112	2·06	2·50	4·56	
1927...	44,347	101	112	2·28	2·53	4·81	
1928...	44,809	102	121	2·28	2·70	4·98	
1929...	46,219	140	103	3·03	2·23	5·25	
1930...	47,536	119	131	2·50	2·76	5·26	
1931...	46,423	116	102	2·50	2·20	4·70	
1932...	44,944	126	113	2·80	2·51	5·31	
1933...	44,519	113	101	2·54	2·27	4·81	
1934...	44,878	121	148	2·69	3·30	5·99	
1935...	47,717	119	107	2·49	2·24	4·73	
1936...	48,630	116	132	2·39	2·71	5·10	
1937...	50,878	99	124	1·94	2·44	4·38	
1938...	52,065	78	114	1·50	2·19	3·69	
1939...	53,517	69	124	1·29	2·32	3·61	
1940...	54,439	67	116	1·23	2·13	3·36	
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TABLE 29.—EUROPEANS DEATHS FROM PUERPERAL CAUSES BY AGE GROUPS.

Causes.	1941.							1942.								
	All Ages.	15-19.	20-24.	25-29.	30-34.	35-39.	40-44.	45 and Over.	All Ages.	15-19.	20-24.	25-29.	30-34.	35-39.	40-44.	45 and Over.
Post Abortive Infection.																
Spontaneous, Therapeutic or of Unspecified Origin.	10	—	3	1	4	1	1	—	12	1	5	2	2	2	—	—
Abortion induced for reasons other than Therapeutic.	2	—	—	—	—	2	—	—	6	1	1	3	—	—	1	—
Abortion without mention of Septic Condition.																
Spontaneous, Therapeutic or of Unspecified Origin.	4	—	1	1	—	2	—	—	4	—	—	3	—	1	—	—
Abortion induced for reasons other than Therapeutic.	3	—	—	1	1	1	—	—	2	—	1	—	—	1	—	—
Haemorrhage and Diseases of Pregnancy.																
Ectopic gestation.	11	—	—	4	1	5	1	—	7	—	1	1	1	3	1	—
Haemorrhage from Placenta Praevia.	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—
Haemorrhage from Premature separation of Placenta and other accidental haemorrhage (except Abortion).	—	—	—	—	—	—	—	—	3	—	—	1	1	1	—	—
Other and unspecified haemorrhage.	—	—	—	—	—	—	—	—	11	—	2	3	3	3	—	—
Eclampsia.	3	1	—	—	2	—	—	—	2	—	1	1	1	1	1	—
Albuminuria and Nephritis.	8	3	—	1	3	1	—	—	1	—	1	—	—	1	—	—
Acute Yellow Atrophy of the Liver.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Toxaemias.	6	—	2	—	2	1	1	—	5	—	1	1	2	1	—	—
Other diseases and accidents.	1	—	—	—	1	—	—	—	3	—	1	—	1	—	1	—
Haemorrhage and Diseases of Childbirth and the Puerperium.																
Haemorrhage from Placenta Praevia.	2	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—
Haemorrhage from Premature separation of Placenta.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other haemorrhages during childbirth.	1	—	—	2	5	5	7	1	20	2	2	8	5	2	1	—
Other haemorrhages after childbirth.	20	—	2	5	5	7	1	—	20	2	2	8	5	2	1	—
General or local puerperal infection (including puerperal tetanus) with or without mention of Pyelitis.	28	3	7	7	7	2	2	—	36	5	4	5	8	7	6	—
Thrombo Phlebitis.	3	1	—	1	1	—	—	—	2	—	—	—	1	1	—	—
Embolism and sudden death.	3	—	2	—	1	—	1	—	4	—	—	1	1	1	—	—
Eclampsia.	8	—	2	2	1	2	1	—	4	1	2	1	—	—	—	—
Albuminuria and Nephritis.	1	—	—	—	—	1	—	—	1	—	—	1	—	—	—	—
Acute Yellow Atrophy of the Liver.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Other Toxaemias.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Accidents.	18	—	3	3	5	6	1	—	26	1	1	7	7	4	6	—
Other or unspecified diseases.	2	—	—	1	—	—	1	—	7	—	—	1	2	1	2	—
TOTAL.	136	8	22	29	33	32	11	1	159	11	21	41	33	32	17	—

## 7. NURSING AND MATERNITY HOMES.

Tables 30 to 33 show the number of nursing and maternity homes registered with the Department, the amount of accommodation, the number of staff and the number of inspections carried out.

Of the 49 new registrations during the year all except two homes had properly qualified people in charge. These two consisted of a maternity home for non-Europeans which was registered with an untrained person in charge and a general nursing home for chronic sick patients which was registered with a midwife in charge. This is a great improvement on previous years when many nursing and maternity homes were registered with inadequately qualified persons in charge.

It is unsatisfactory that the Department finds it necessary to register any nursing homes under the charge of unqualified persons. This matter was discussed in the annual report for the year ended June, 1941. Since that time some improvement has been brought about and the present position is as follows:—

(i) There are 15 maternity homes run by unregistered persons and 5 of these also admit general cases. In 1941 there were 16 maternity homes so run, 8 of which admitted general cases.

(ii) There are 28 nursing homes in charge of midwives but which admit general cases. Most of these homes also admit maternity cases. In 1941 there were 47 in this position.

(iii) There are 12 nursing homes run by nurses with only medical and surgical qualifications but which admit maternity cases. Most of these homes also admit general cases. In 1941 there were 14 such homes.

Unfortunately the acute shortage of trained nurses has led to a decrease in the total number of trained nursing staff employed in a number of nursing homes. There is, however, evidence of a gradual improvement in the general standard of nursing homes.

TABLE 31.—NURSING HOMES REGISTERED WITH THE DEPARTMENT.

Year.	Cape.	Transvaal.	Natal.	Orange Free State.	Total.
As at 30/6/1929...	104	90	43	26	263
As at 30/6/1930...	124	91	54	29	298
As at 30/6/1931...	110	98	51	25	284
As at 30/6/1932...	95	94	44	26	259
As at 30/6/1933...	105	100	46	25	276
As at 30/6/1934...	115	103	43	28	289
As at 30/6/1935...	126	128	42	28	324
As at 30/6/1936...	120	116	46	34	316
As at 30/6/1937...	134	120	49	35	338
As at 30/6/1938...	140	126	55	55	376
As at 30/6/1939...	147	124	61	48	380
As at 30/6/1940...	146	125	62	52	385
As at 30/6/1941...	145	123	60	53	381
As at 30/6/1942...	140	123	57	45	365
As at 30/6/1943...	146	119	55	53	373

TABLE 30.—NURSING AND MATERNITY HOMES INSPECTED DURING THE YEARS ENDED 30TH JUNE, 1938, 1939, 1940, 1941, 1942 AND 1943, RESPECTIVELY.

Place	INSPECTIONS.									
	By Officers of Local Authority.					By Departmental Officers.				
	1938	1939	1940	1941	1942	1938	1939	1940	1941	1942
Cape Province.										
Cape Town....	11	27	22	23	28	23	—	—	—	—
East London....	6	7	4	8	6	6	—	—	2	3
Port Elizabeth....	5	5	4	5	5	4	2	—	65	47
Elsewhere.....	—	—	1	2	1	—	35	73	57	—
Natal Province.										
Durban....	18	17	11	16	12	10	1	—	—	—
Pietermaritzburg....	3	—	—	2	2	6	—	—	27	16
Elsewhere.....	—	—	—	—	—	11	27	15	27	16
Transvaal Province.										
Johannesburg....	43	36	28	27	6	33	4	—	—	—
Other Rand L.A.'s	9	6	14	10	12	7	4	—	—	6
Pretoria....	7	5	7	7	3	5	—	1	2	3
Elsewhere.....	—	—	1	—	—	—	54	40	34	28
Orange Free State.										
Bloemfontein....	—	—	—	—	—	5	4	4	—	3
Elsewhere.....	—	—	—	—	—	2	25	36	19	26
UNION.....	102	103	92	100	75	107	157	168	132	151

TABLE 32.—BED ACCOMMODATION AVAILABLE IN NURSING HOMES.

Province.	1940.		1941.		1942.		1943.	
Euro- pean.	Non- Euro- pean.	Euro- pean.	Non- Euro- pean.</					

TABLE 33.—PERSONNEL OF NURSING HOMES.

Province.	European.		Non-European.	
	Qualified.	Unqualified.	Qualified.	Unqualified.
Cape.....	355	271	12	77
Transvaal.....	398	285	13	91
Natal.....	188	133	40	213
Orange Free State.....	64	30	1	2
TOTALS.....	1,005	719	66	383

TABLE 34.—DISTRICT NURSING SERVICE: NURSES, MIDWIVES AND NON-EUROPEAN NURSING ASSISTANTS AS AT 30TH JUNE, 1943, IN RESPECT OF WHOM SUBSIDIES OR PART-REFUNDS OF SALARIES ARE PAID, COMPARED WITH THE TOTALS AS AT 31ST DECEMBER, 1935.

Race.	Part-refunds under section 14 (a).		Subsidies under section 14 (b).		Part-refunds under section 15 (a).		Subsidies under section 15 (b).		Part-refunds to Provincial Administrations under section 13.	
	1935.	1943.	1935.	1943.	1935.	1943.	1935.	1943.	1935.	1943.
European.....	23	97	7	68	—	10	—	—	—	137
Native.....	2	20	—	—	11	78	3	76	—	19
Coloured.....	—	8	1	3	—	1	—	2	—	25
ALL RACES.....	25	125	8	71	11	89	3	78	—	181

## 9. GENERAL HOSPITALS.

The Department in consultation with the Department of Public Works continues to advise Provincial Administrations on new hospital schemes or extensions to existing hospitals. It is unfortunate that owing to the present abnormal conditions and the consequent shortage of professional officers the routine inspections of state-aided hospitals on behalf of the Provincial Administrations have had to be temporarily discontinued. In spite of the war-time difficulties, including the acute shortage of nurses, and the prospect of hospital accommodation becoming available after the war when some existing military hospitals will no longer be required for military purposes, undertakings to improve the general hospital position in the Union have not been entirely held in abeyance.

During the year the Transvaal Provincial Council passed two amending ordinances designed to improve or extend hospital policy, including the provision for an enlarged Public Hospital Advisory Council and for the creation of the post of Medical Director of Hospitals. These measures should have a marked effect in increasing the efficiency of the hospitals in the province. In Louis Trichardt the erection of a new hospital was commenced and is now nearing completion. This hospital will supply a long felt want in the far north of the province. At the Germiston hospital new buildings have been provided.

In the Orange Free State Province a scheme for the erection of a hospital in Frankfort has made good progress. In this province the administration considers that there is sufficient accommodation at present to meet the needs of all the sick poor for whom it is responsible. The province has, however, not provided any special accommodation for chronically sick patients in its area.

In the Natal Province no additional accommodation has been provided. It is understood, however, that a scheme to provide a new hospital for Europeans in place of the existing hospital in Durban is under consideration.

In the Cape Province no new developments of any importance in hospital construction have taken place during the year under review.

## 10. DENTAL SERVICES.

The Dental Health Officer has continued his survey of dental conditions and has again carried out a large number of examinations of school children in the Cape, Free State and Transvaal Provinces. The results of these investigations confirm what has been found previously, that the incidence of dental caries amongst European school children is appallingly high. This has been found to apply more especially to the south-eastern districts of the Cape, as the following table indicates:—

Province.	Number Examined.	Number with Dental Caries.	Percentage.
Cape—			
South-Eastern districts.....	1,569	1,536	98
Other districts.....	5,492	4,686	85
Orange Free State.....	1,276	1,162	91
Transvaal.....	5,781	4,962	86
TOTALS.....	14,118	12,346	87

It was also noticed that the incidence of dental caries is considerably higher among the children living in the urban areas than among those living in the rural areas.

## 8. DISTRICT NURSING SERVICES.

Table 34 indicates the position in regard to district nursing services subsidised in terms of Act No. 57 of 1935. The number of district nursing services is still increasing but the shortage of doubly qualified nurses has led to a large number of midwives being appointed to district nursing posts. The increase in the number of nursing services has made it impossible to carry out an annual inspection of each and only a limited amount of supervision and organisation can be undertaken. During the year 188 centres were visited in connection with nursing and maternity services.

TABLE 34.—DISTRICT NURSING SERVICE: NURSES, MIDWIVES AND NON-EUROPEAN NURSING ASSISTANTS AS AT 30TH JUNE, 1943, IN RESPECT OF WHOM SUBSIDIES OR PART-REFUNDS OF SALARIES ARE PAID, COMPARED WITH THE TOTALS AS AT 31ST DECEMBER, 1935.

Race.	Part-refunds under section 14 (a).		Subsidies under section 14 (b).		Part-refunds under section 15 (a).		Subsidies under section 15 (b).		Part-refunds to Provincial Administrations under section 13.	
	1935.	1943.	1935.	1943.	1935.	1943.	1935.	1943.	1935.	1943.
European.....	23	97	7	68	—	10	—	—	—	137
Native.....	2	20	—	—	11	78	3	76	—	19
Coloured.....	—	8	1	3	—	1	—	2	—	25
ALL RACES.....	25	125	8	71	11	89	3	78	—	181

## 11. THE SOUTH AFRICAN MEDICAL COUNCIL.

The following table indicates the number of registrations and restorations effected during the year:—

	Registrations.	Restorations.
Medical Practitioners .....	250	89
Dentists .....	5	18
Medical Students .....	378	3
Dental Students .....	31	—
Nurses .....	792	69
Midwives .....	461	33
Masseurs .....	—	—

As in the previous year, the number of nurses coming into the Union from overseas decreased. Only 78 such nurses were registered. Most of these had qualified in Great Britain, a few in the dominions and the remainder came from various other countries.

The following table shows the number of persons whose names appeared in the various registers on the 30th June, 1943:—

Medical Practitioners .....	3,711
Dentists .....	731
Medical Students .....	1,498
Dental Students .....	79
Nurses .....	8,330
Midwives .....	5,657
Masseurs .....	99
Dental Mechanicians .....	121

The Council still continues to receive a number of applications for registration as specialists. These applications are considered by a special committee, sitting with advisory members of the Medical Association of South Africa. The Council's requirements in regard to the registration of specialists have been tightened up somewhat, and only those applicants who fully comply with the minimum requirements laid down are registered.

During the year under review, a further meeting was held of representatives of the Council and the universities having medical schools to discuss matters relating to medical education. It is hoped that the deliberations of this joint committee will bear fruit in so far as the training of medical practitioners and dentists in this country is concerned.

The Council continues to receive complaints against registered persons. Formal enquiries were held into the conduct of 6 medical practitioners and 1 dentist and 1 midwife, which resulted in all the persons with the exception of 1 doctor being found guilty and sentenced to various penalties.

The Council has given evidence before the National Health Services Commission.

## 12. THE SOUTH AFRICAN PHARMACY BOARD.

During the period under review, 44 chemists and druggists, 20 managing directors of companies carrying on the business of chemists and druggists, and 97 apprentices were registered. On the 30th June, 1943, the names of 1,573 chemists and druggists, 145 managing directors and 280 apprentices appeared in the Board's registers. The Board has received complaints of unprofessional conduct on the part of a few registered chemists and druggists. Three enquiries were held and in all cases the accused were found guilty. The Board gave evidence before the National Health Services Commission in January, 1943.

## 13. ADMINISTRATION OF THE MEDICAL, DENTAL AND PHARMACY ACT, NO. 13 OF 1928.

### Habit-forming Drugs.

TABLE 35.—PROSECUTIONS AND CONVICTIONS UNDER LAWS RELATING TO HABIT-FORMING DRUGS DURING THE YEAR ENDED 30TH JUNE, 1943.

	European.	Native.	Asiatic.	Other Coloured.	Total.							
	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.						
Cape.....	26	24	585	540	26	26	1,074	1,056	1,711	1,646		
Natal.....	32	31	3,305	3,220	131	130	261	257	3,729	3,638		
Transvaal.....	76	65	3,745	3,599	10	8	311	299	4,142	3,971		
Orange Free State	8	6	499	489	—	—	24	23	531	518		
UNION.....	142	126	8,134	7,848	167	164	1,670	1,635	10,113	9,773		

The total number of prosecutions in the Union amounted to 10,113 of which 10,080 were in respect of dagga and 33 on account of other habit-forming drugs. Large quantities of dagga were seized and destroyed by burning. Small amounts of opium and other narcotic drugs confiscated were disposed of by informal tender to firms of chemists and druggists.

The quantities of narcotic drugs imported into the Union during the year ended June, 1943, were:—

Raw opium, 333 lbs.; medicinal opium, 124½ lbs.; opium, in the form of extracts and tinctures, 325½ lbs.; coca leaves, 68 lbs.; Indian hemp in the form of extract, 10½ lbs.; morphine, 114½ lbs.; diacetylmorphine, 15 lbs. and cocaine, 144½ lbs.

The following narcotic drugs were exported to the adjoining territories during the period under review:—

Opium in the form of tinctures and extracts, 21 lbs.; morphine, 1 lb.; diacetylmorphine, 2 ozs., and cocaine, 3½ lbs.

The quantity of drugs imported, as was anticipated, was much less than during the previous year. Importers have sufficient stocks in reserve to meet the demand in the event of undue delays in receiving additional supplies from overseas.

The inspection of records relating to habit-forming drugs has been carried out as well as a depleted staff and curtailment of transport facilities would allow and legal proceedings have been instituted where inspection has revealed flagrant disregard for the provisions of the Medical, Dental and Pharmacy Act, No. 13 of 1928.

Stocks of habit-forming drugs continue to be kept in nursing homes in contravention of the provisions of Act No. 13 of 1928, and the co-operation of medical practitioners is being sought to prevent the increase of the practice. Failure to comply with the provisions of the Act in this respect will necessitate stricter measures being adopted to eradicate this undesirable state of affairs.

### Poisons.

Departmental officers in the course of their inspections of general dealers' premises continued to find contraventions of Act No. 13 of 1928, in regard to the storage, labelling and sale of poisons. Warnings have been issued for first offences but in all other cases legal proceedings were instituted against the offenders.

The following amendment of the Fourth Schedule of the Medical, Dental and Pharmacy Act, No. 13 of 1928, was made during the year:—

To be added to Division I.—Cocaine substitutes (under whatever name they may be described or sold) being:

Amino-alcohols, esterified with benzoic acid, phenylacetic acid, phenylpropionic acid, cinnamic acid or the derivatives of these acids; guanidines, the following: polymethylene diguanidines dipara-anisylphenetyl guanidine; orthocaine; its salts; oxycinchoninic acid, derivatives of: their salts; their esters; para-amino-benzoic acid; esters of: their salts; phenetidylphenacetin.

In addition the undermentioned preparations were declared to be "poisonous substances" to which the provisions of section eighty-two of the Act applies:—

"Disinfectants or similar preparations which contain any of the group of substances known as phenols and which are not 'Poisons' within the meaning of the Fourth Schedule of this Act."

## 14. ADMINISTRATION OF THE FOOD, DRUGS AND DISINFECTANTS ACT (NO. 13 OF 1929).

TABLE 36.—SAMPLES TAKEN FOR EXAMINATION OR ANALYSIS UNDER ACT NO. 13 OF 1929, DURING THE YEAR ENDED 30TH JUNE, 1943, AND THE RESULTS.

Place.	Total Taken.	Number Analysed or Examined.	Number Found Adulterated or Incorrectly or Falsely Described.	Prosecutions.	Convictions.
Ports of the Union.....	86	86	5	—	—
Cape Province.....	1,492	1,374	261	126	110
Natal Province.....	525	525	35	24	19
Transvaal Province.....	2,131	2,131	479	339	162
Orange Free State Province.....	336	332	20	17	16
TOTAL.....	4,570	4,448	800	506	307

## 15. NUTRITION AND DIETETICS.

### National Nutrition Council.

Meetings of the Council and the various Standing Committees appointed to deal with (a) Research, (b) Agriculture and Economics, and (c) Education and Propaganda, were held during the year and a number of matters dealt with.

As stated in the previous year's report a proposal had been made to establish a nutrition section within the Department under the supervision of a qualified nutrition officer. The section has since been established and Dr. J. M. Latsky has been appointed Nutrition Officer on the staff of the Department.

Matters to which particular attention was given by the Council and its committees during the year include the improvement of the machinery of the Council, the question of the production of a cheap butter substitute, the bread position, mealie meal, the establishment of fruit and vegetable organisations by employees in trades and industries, the distribution of surplus citrus, the use of the film in nutritional education and propaganda, dehydrated foods, food yeast, brewer's yeast, the National Scheme for school feeding and remedies for malnutrition in South Africa.

With regard to the question of the use of fish liver oil produced in South Africa, mentioned in last year's report, it is of interest to state that on the suggestion of the Council, the use of the oil has been recommended to all the Provincial Administrations General Hospitals, etc.), Medical Officers of Health, Institutions under the control of the Department as well as those falling under the Department of the Interior. Articles are also shortly to be published in the South African Medical Journal and the Journal of the Associated Pharmaceutical Societies of South Africa, urging the use of South African fish liver oils in view of their high vitamin content and the scarcity of cod liver oil.

The work of the Council, since its establishment in 1940, is more fully dealt with in a comprehensive report which it is hoped will be published shortly.

### Dietetics.

The Bantu dietary survey in Natal, mentioned in last year's report, was concluded, but the results are not yet available. A survey was made, the report of which it is hoped to publish shortly, of the diet of 100 Indian families in Durban, in connection with the alleged need for feeding Indian children at school. The survey revealed marked deficiencies in the total quantity of food consumed, as well as gross shortages of protective factors such as protein, calcium and vitamin A.

In collaboration with medical officers of the Department, a study was made of the diet of the Coloured population at Port Nolloth whose inhabitants show symptoms of the lack of fresh foods. The effects of supplements of such protective foods as can be transported to that area, upon the health of children at a local orphanage, are being studied.

Inspections, lectures and correspondence on dietary matters were carried out as in previous years.

## 16. ALGAE POISONING.

During the last two years, reports have been received by the Department of Agriculture and Forestry, of high mortality amongst cattle in the neighbourhood of Oranjeville, on the Vaal River. In the early part of 1943 this mortality took on alarming proportions and investigations were carried out by officers from the Division of Veterinary Services at Onderstepoort.

It was established that the water in certain areas in the Vaal Dam was highly poisonous to animals and that the toxic agent was a poison derived from algae, which during the warm weather and sunshine flourished over vast stretches of water in the Wilge and Vaal Rivers above the Dam. A blue-green scum forms where the algae are heaped together, especially in shallow stretches, and on decomposition a terrible stench is given off. The material leaching from the algae imparts an opalescent sheen to the water, ranging from blue to green and red. Algal growths so far identified as poisonous belong to the *microcystis aeruginosa* and *microcystis flos aquae* varieties. Both the fresh and decomposed algae are poisonous as well as the water in which they occur. Boiling does not remove the toxic principle.

It has now been established that these algal growths occur in other dams such as Bon Accord, north of Pretoria, as well as in shallow pans and vleis in other areas of the Transvaal, where they exhibit the same toxic properties.

It has been demonstrated at Onderstepoort, that acute poisoning causes the death of test animals within a few hours with acute necrosis of the liver and haemorrhages in other internal organs as the chief phenomena. Animals suspected of chronic poisoning exhibit photo-sensitisation with loss of hair, cirrhosis of the liver and emaciation.

No cases of human intoxication have been reported so far, but there seems no reason why this source of poisoning should not constitute a grave danger to humans as well as animals drinking water direct from those portions of the dams where the algae are highly concentrated. There is no danger, however, to the Rand Water Board supply owing to the great dilution which this water undergoes although the position is being closely watched.

In consultation with this Department and the Rand Water Board energetic steps have been taken by the Division of Veterinary Services and the Department of Irrigation to eradicate algal growths from the Vaal Dam area by adding copper sulphate to the infested water, the aim being to achieve a dilution of 1 part of copper sulphate to 4,000,000 parts of water, a concentration which has no harmful effects on fish, animals or humans. Unseasonable rains and bad weather have hampered operations so far, but a good deal of success has been achieved and the work is still under way.

## VII.—ACKNOWLEDGMENTS.

I wish to acknowledge the co-operation and assistance of all other Government Departments, the Railway Health Department, the Provincial Administrations and local authorities with which we have been in contact. Thanks are also due to the South African Institute for Medical Research, Medical Council, Pharmacy Board and to the Medical Association of South Africa.

The staff of the department has carried out its duties in a loyal and efficient manner despite the many difficulties resulting from war conditions.

I have the honour to be,

Sir,

Your obedient servant,

PETER ALLAN,  
Secretary for Public Health.

Pretoria.





